

COMPUTERWORLD

Win 95 keeps 'em guessing

The \$64,000 question: Bypass 95 for NT?

By Cheryl Gerber

A growing cadre of specialized corporate users is reluctant to adopt Microsoft Corp.'s Windows 95 and is heading straight for Windows NT on the desktop instead.

"Skipping Windows 95 and going directly to NT is a serious consideration for us, if only to avoid having to support two desktop operating systems," said Tim Littleton, senior client support analyst at Southern Co. in Birmingham, Ala.

Analysts said they have wit-

nessed this phenomenon. "We have received a lot of client inquiries about whether to go to Windows 95 or directly to NT on the desktop," said Michael Gartenberg, an analyst at Gartner Group, Inc. in Stamford, Conn.

"Our position is that NT on the desktop is warranted only in situations where you can leverage its strengths, but Windows 95 is the smoothest migration path from installed corporate PCs," Gartenberg said.

Southern Co., the parent company of Windows NT, page 16

High hopes

Microsoft executives estimated that between 10% and 25% of current Windows users will buy Windows 95 in its first year. With slightly more than 100 million PCs already running Windows, that estimate represents 10 million to 25 million units. Windows 95 goes on sale Aug. 24.

Users may sneak in copies; can IS keep up?

By Stuart J. Johnston

Corporate IS managers may be about to relearn an important lesson — what you don't know can hurt you.

Many information systems organizations have decided to take a reasoned, slow and deliberate approach to adopting Microsoft Corp.'s Windows 95. But they admit they can't stop maverick users from installing it on their own. And they don't have any mechanisms they get into inevitable trouble.

So far, corporate help desks appear to be woefully unprepared.

"I can't see us stopping people from using it, as long as they support themselves," said George Wiegman, assistant director of technical services at the American Dental Association in Chicago, which has 400 PC users. He acknowledged that if users install Windows 95 and something breaks, it falls in his lap. "We don't even have a help desk yet," he said.

While corporate IS managers say they will not support anyone running unauthorized software, virtually every user reached last week by *Computerworld* acknowledged they cannot ignore Can IS keep up? page 14

IBM desktop will defer to Notes family

By Suresh Mohan and Cheryl Gerber

Moving swiftly to allay the fears of their customers, IBM and Lotus Development Corp. last week broke their silence and outlined plans to integrate their product lines.

Notes clearly emerged the winner, with IBM agreeing to play second fiddle to Lotus' collaborative computing environment.

"Notes is at the heart of IBM's client/server workgroup strategy, and increasing the number of Notes seats is the joint No. 1 priority [for IBM/Lotus]," said John M. Thompson, a senior vice president at IBM in Armonk, N.Y.

Toward that end, the companies decided to drop pieces of IBM's Workgroup products or merge them with Notes, signaling a not-

IBM, page 107

Informix to 'object-ize' database

By Kim S. Nash

Informix Software, Inc. is remaking its flagship Informix-OnLine database into a hybrid object relational product expected to ship by this time next year, company officials revealed last week.

The hybrid will combine object-oriented features, such as support for the C++ programming language, with Informix-OnLine's existing relational technology, confirmed David Watson, manager of server and connectivity marketing at the Menlo Park, Calif., company. Users will still be able to buy a purely relational Informix-OnLine, but they can also opt for the crossbred version. Although a general release hybrid product is tentatively scheduled to ship by mid-

Informix, page 107

FIRST IN A TWO-PART SERIES ON SOFTWARE PIRACY OVERSEAS

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What a deal!



*A pirate hawk's clasp,
bootleg software at a
Russian flea market*

By Marc Forrant
Paris Bureau Chief, IDG News Service

Moscow — It's noon, the last Saturday in May. If you close your eyes, the withering heat and fine dust hanging in the air conjure up images of sunbaked steppes that replace the reality of this Russian city's urban sprawl. As you near Radio Rynok, the consumer electronics bazaar on the edge of the city, the buildings get grimmer and sparser.

The hodgepodge architecture and careening traffic of the central city fall behind you. Ahead, stretched out over acres of sickly grass and dirt, is a thriving bazaar, or "rynok," a weekend flea market for consumer electronic goods that are pirated, counterfeited, used or new or somehow diverted from retail shelves. Sheet-metal kiosks, mainly drab green but also pale blue and washed-out yellow, stretch out in rows.

At Radio Rynok, you can buy big-name PC components at wholesale prices and PC software at a fraction of the suggested retail cost — less than a dollar per program for software collections on CD-ROM, for example.

What a deal? page 77

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(10)

Apples

■ Apple has an established foothold with scientific and engineering users with its Power Macintosh, a machine that some observers consider a viable alternative to low-end Unix workstations. **Page 41**



■ Macintosh experts must learn technology such as NetWare to compete with their PC counterparts. **Page 83**

■ GTE MobileNet and Ameritech sign a roaming interoperability agreement for their GTE networks, giving customers of one network access to the other when traveling. **NEWS, page 16**

■ The imaging market continues to consolidate, with leaders FileNet and Wang buying companies with NT products. **NEWS, page 15**

■ Intergraph lays off 600 workers in an effort to return to profitability by year's end. **NEWS, page 16**

■ ATM start-up First Virtual introduces a turnkey package for supporting video over ATM, showing there are uses today for what many call tomorrow's technology. **NEWS, page 20**

■ CA-World attendees say they are hungrier for the end-to-end management capabilities rather than the futuristic 3-D visualization interfaces that Computer Associates is planning to deliver next year in its new version of CA-Unicenter. **NEWS, page 28**

■ The IS department is an afterthought at many companies building a World Wide Web presence on the Internet. **NEWS, page 28**



■ A pile of high-tech companies reported record earnings, but tech stocks were down as the stock market cooled. **NEWS, page 32**

■ Tandem and Stratus are falling below analysts' earnings expectations this quarter. **NEWS, page 32**

■ NEC continues its aggressive thrust in the U.S. notebook market with a new, feature-rich lineup. **DESKTOP COMPUTING, page 43**

■ On Technology recently announced a new version of DaVinci Email that uses Novell's NetWare Directory Services. **WORKGROUP COMPUTING, page 48**

■ Is the Simple Network Management Protocol becoming irrelevant, or is it on the way to becoming all things to all systems, network and application management domains? **ENTERPRISE NETWORKING, page 53**

■ Novell and Banyan embrace Microsoft's Open Directory Service Interfaces — Banyan wholeheartedly and Novell with some reservations. **ENTERPRISE NETWORKING, page 53**

■ Early adopters of Advanced Peer-to-Peer Networking, IBM's peer-to-peer update of SNA, are keeping it hidden in their data centers. **LARGE SYSTEMS, page 61**

■ Consumer credit reporting giant Equifax is now performing checkups on doctors. **LARGE SYSTEMS, page 61**

■ IBM will help develop and resell AlimTech's IconAuthor multi-media authoring software. **APPLICATION DEVELOPMENT, page 67**

■ Internet access software is fast becoming a commodity market. **MARKETPLACE, page 92**

■ Michael Cohn says outsiders, downsizees and cyberbarons are wrecking IS. But bring back the vendors with great donuts and coffee mugs. **VIEWPOINT, page 37**

■ The more things change, the more they stay the same. Bill Laberis says, particularly in the software arena — where piracy is costing the industry and, by extension, customers, billions of dollars a year. **EDITORIAL, page 36**

■ David Michael Bernard argues that keyboard-enhanced PDAs will beat handwriting recognition any day. **VIEWPOINT, page 37**



Calendar.....	Page 75
Company Index.....	Page 104
Editorial/Letters to the editor.....	Page 36
July 21 Stock Ticker.....	Page 105
How to contact Computerworld.....	Page 108

Executive Briefing

Legal issues continue to dominate the industry this week. A Federal Trade Commission probe of Packard Bell could result in guidelines defining what a "new" PC actually is. Computer Associates orchestrates a user petition drive to support its controversial acquisition of Legent, while settlement talks with the Justice Department go into extra innings. Three on-line services urge Microsoft to unbundle its on-line network software from Windows 95; they also ask Congress to support the federal antitrust probe. **Page 2.** The Justice Department indicates it is willing to free IBM from some — but not all — of the constraints of a 39-year-old antitrust decree. **Page 4**

Bay Networks will incorporate its routing software into Microsoft's Windows NT Server under a deal announced this week. This will address the routing needs of remote and mobile workers, the vendors said. **Page 12.** NT Server 3.5 is a solid release that tightens NT's links with Windows 95 and Novell's NetWare. Timothy Trumble says in *Computerworld's* Test Drive. **Page 47**

The arduous migration of operating systems and applications to Windows 95 should get easier, thanks to new software distribution products from Microsoft and Oculent Software. Likewise, Symantec's new Norton Desktop Administrator should also ease migration patterns. **Page 14.** Users rave about Windows 95 upgrade of Microsoft's two desktop database products: Visual FoxPro and Access. **Page 39**

AT&T announces multipoint videoconferencing over public Integrated Services Digital Network lines and plans to enhance its phone-to-LAN connection, allowing tighter integration of voice and data. **Pages 10 and 56**

Digital makes a more aggressive play for business on the Web by packaging a suite of Internet-friendly software on three of its Alpha machines. **Page 16.** And as vendors such as Data General select Intel as the chip of choice, Digital's Alpha becomes more of a marginal player. **Page 61**

IBM has finished developing and field-testing an object-based Cobol product that is part of its plan for securing mainframes a spot in the client-server market. **Page 6.** Intervox hosts performance of its Cobol maintenance tool. **Page 67**

The 5th Wave by Rich Tennant





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SunSoft's full DOE tool set, OpenStep delayed

By Elizabeth Heltcher and
Jean S. Boman

The ambitious object technology development program under way at SunSoft, Inc. is suffering from delays that could send Sun customers into the arms of rivals such as Taligent, Inc.

SunSoft already missed its spring 1995 delivery date for the object-oriented development environment OpenStep for Solaris. OpenStep is an operating-system-independent version of Next Computer, Inc.'s NextStep development system. Sun last week confirmed that it is delaying until fall the first release of its Distributed Objects Environment (DOE). A summer unveiling had been planned.

Object distribution

The release, code-named Prelude, is to include infrastructure technology such as an object request broker and related services, which allow objects to be distributed and interact over networks, said Brian Croft, director of marketing for object products at SunSoft. Prelude will also include some administration utilities.

A full-function version of DOE, dubbed Crescendo, is slated to enter beta-testing in the next quarter, Croft said. It will include OpenStep for Solaris—roughly a year late.

The OpenStep delays stem from unanticipated technical hurdles in porting to Solaris from the Mach operating

system Next users, he said (see chart). Of most concern to users and industry watchers is Sun's failure to ship OpenStep.

"For all the talk about OpenStep, you'll be able to get Taligent frameworks from IBM later this month, and you can't do the same with OpenStep," said Adrian Bowies, president of Atelier Research in Westport, Conn.

A slow roll	
Early Developer Release of DOE (EDR 1) for Solaris	Mid-1993
Early Developer Release of DOE (EDR 2) for Solaris	Spring 1994
OpenStep Developer Kit for Intel x86 only	Spring 1994
NextStep on Sun's SPARC hardware	Spring 1995
Beta version of Prelude (DOE only)	Spring 1995
Production copy of Prelude (DOE only)	Fall 1995
Beta version of Crescendo (DOE and OpenStep)	Fall 1995
Production copy of Crescendo (DOE and OpenStep)	Spring 1996

Taligent is a joint venture of IBM, Apple Computer, Inc. and Hewlett-Packard Co. IBM will this week begin full customer shipments of an AIX-based version of CommonPoint, the object-oriented development environment that Taligent has delivered to its sponsors. CommonPoint for OS/2 and HP-UX are expected later this year.

Yet users and analysts also noted that since most companies are still in the early stages of choosing object-oriented computing infrastructures, Sun's delays may cause less harm in the long run.

CS First Boston in New York runs more than 1,000 Sun machines in the firm's fixed-income trading group. Information systems manager Jim Swanson said he is interested in OpenStep's advanced object-oriented development environment to improve productivity compared with working directly in C++ as developers do now. "It would provide an architecture for development that would enable us to produce new software more quickly," he explained.

For longtime Sun site Du Pont Co. in Wilmington, Del., Sun's project delays moved Taligent's CommonPoint application development environment to the front of the line, said David Pensak, senior research fellow and principal consultant for advanced computing technology.

"What we like about Taligent is that we are able to do development right now on our [IBM] RS/6000s, knowing we'll be able to run that on our HP boxes and our Macintoshes," Pensak said.

Senior editor Kim S. Nash contributed to this report.

Sun seeks major partners. See page 45.

mount elaborate media and political campaigns" to thwart competition. Gates, speaking at the firm's financial analysts' meeting last week, dismissed concerns about monopoly power by noting that the on-line service is now "a zero market-share product."

Earlier Web access

At its Interactive Media Conference last week in Long Beach, Calif., The Microsoft Network general manager Russell Singleton said subscribers would get full Internet access, including a World Wide Web browser, immediately. Microsoft had previously said browser access into the Internet would take a few more months.

Late last week, the Justice Department withdrew the subpoenas that Microsoft had challenged as an overly broad "fishing expedition" [CW, July 3]. Because Microsoft is on schedule for the Windows 95 Aug. 24 launch and refused to provide documents, Justice said it will make its decision based on evidence already collected.

Senior editor Stuart J. Johnston contributed to this report.

Consent decree limits on IBM may be loosened

Justice Dept. favors lifting restrictions on services and workstations but not big iron

By Craig Stedman and Mitch Batts

The U.S. Department of Justice's indication last week that it is willing to free IBM from some—but not all—of the constraints of a 30-year-old antitrust decree was viewed favorably by many interested vendors. But some of IBM's services rivals said they felt targets had just been pointed on their backs.

In a preliminary answer to a 1994 IBM suit that seeks to repeal the 1956 Consent Decree, the Justice Department said restrictions on the computer giant's PC, workstation and service business could safely be dropped without stifling competition.

That would allow IBM to do as it pleases in leasing, servicing and reselling its desktop and Unix systems. IBM would also no longer have to sell equipment to its services and outsourcing operation at market prices, which could sharply lower the unit's costs, observers said.

But Justice said it is not yet ready to unleash IBM in the System/360 mainframe and AS/400 midrange markets. Terminating the entire decree "could permit IBM to exclude... alternative sources of supply" such as plug-compatible systems and used equipment, the filing said.

Restrictions in these areas force IBM to sell mainframes and AS/400s to leasing vendors and also make technical manuals and parts available. The Justice Department's desire to keep those parts of the decree met with approval from other vendors and trade organizations.

Freeing IBM in mainframe and AS/400 realms would create "a potential for abuse," said Ed Black, president of the Computer and Communications Industry Association (CCIA) in Washington. "That's where IBM still has a huge market share and the ability to dominate in the PC world, it's not quite the same."

Competitors concede some points

The CCIA, which includes numerous IBM competitors, last August filed a court brief asking that the decree be retained as is. But the Justice's preliminary filing "shows a pretty balanced approach" to dealing with IBM's motion for termination, Black said.

"Some of the areas are probably pretty dated and are logical for IBM to be freed from," said Larry Laurich, a vice president at CCIA member Tandem Computers, Inc.

However, Lawrence Gross, vice president and general counsel at SunCard Data Systems, Inc. in Wayne, Pa., said dropping the service restrictions "would make it much harder" for smaller companies to compete. "We're very unhappy," Gross said. "But at this point I'm not sure how much we can do about it."

IBM declined to comment beyond noting it still wants to see the entire decree terminated.

Top 3 on-line providers plead for Microsoft mercy

Take Microsoft Network out of Win 95, they ask

By Mitch Batts and Ellis Bosker

The Big Three on-line services last week made a last-ditch, public plea to Microsoft Corp. to unbundle the client access software for its on-line service from Windows 95. They also urged congressional leaders to jump-start the federal antitrust probe into the matter.

Executives from America Online, Inc., CompaServe, Inc. and Prodigy Services Co. held a press conference in Washington to argue that the Microsoft Network has an unfair marketing and distribution advantage because of its tight integration with Windows 95.

The on-line services released an open letter to Microsoft Chairman Bill Gates asking him to "do the right thing" and unbundle the application "With dominant position comes added

responsibilities," the letter said.

Another letter was sent to Senate Majority Leader Robert J. Dole (R-Kan.) and other congressional leaders. The threesome, along with Scott McNealy, chief executive officer of Sun Microsystems, Inc., urged Congress to give its "full support" to the U.S. Department of Justice's investigation of Microsoft's network.

But the three on-line vendors said they have no plans now to take Microsoft to court over the bundling issue.

The firms did release a survey of PC owners by Lantz Research Co. in Arlington, Va., that showed that 38% of computer users fear that single-company dominance of these services will impede innovation and drive up costs.

Microsoft fired back with its own letter, saying the rivals were "colluding to

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ORACLE

IBM spies spot for mainframes in client/server

Object-based Cobol set allows code reuse

By Craig Stedman
BOSTON

IBM has finished developing and field-testing an object-based Cobol suite that is a key part of its plan for securing mainframes a place in the client/server world.

But shipments are being held up while IBM puts together training and application migration services demanded by beta users.

The Cobol VisualSet compiler and programming language is scheduled for a mid-September introduction. IBM officials said at last week's Guide International Corp. user group conference here. General availability should start shortly after on IBM desktop machines and mainframes.

A demonstration of Cobol VisualSet at the conference caught the eyes of users such as A. M. McDonald, vice president of computer services at American Security Group, an Atlanta-based financial insurance company that has written all of its back-office applications in Cobol.

"We're never going to throw all of that away," McDonald said. But with the ability to reuse chunks of Cobol code via objects, "you could rehost applications or pieces of applications with a minimum of changes, as opposed to rewriting them all together or switching to C," he added.

IBM is chasing Micro Focus, Inc., its highest competitor in the Cobol business, into the object-oriented arena. Micro Focus, based in Palo Alto, Calif., shipped a 32-bit object Cobol product in February after delivering a 16-bit version last year.

Object-based Cobol provides a way of "gently moving into objects without frightening [programmers] with C++," said Judith Hurwitz, president of Hurwitz Consulting Group, Inc. in Newton, Mass. But there is a strong need for

hand-holding from vendors such as IBM, she said.

Most mainframe-oriented customers "don't have the foggiest idea about what objects would mean to their companies," Hurwitz said. The availability of training and migration services is "a huge issue," especially in the case

Cobol gains

IBM's object-based Cobol offering will support the following operating systems and databases:

Operating System	Database
OS/2	Early fourth quarter
AD	
MVS	
HP-UX	First half of 1990
Solaris	
32-bit Windows	
DB2	Early fourth quarter
VS	
VSAM	
Oracle	Late 1995
Subase Informa	

of Cobol applications that companies "live and die by," she said.

Indeed, training Cobol programmers to use objects will take time and "a lot of money," said Robert Verette, application programs manager for Orendas County in Syracuse, N.Y. The county is looking at both object-based Cobol and C/C++ although it is leaning toward the latter, he added.

IBM planned to offer some services all along, but Cobol VisualSet beta testers said more direct help was required. This assistance is not readily available from third-party firms because they focus on the C++ and Smalltalk languages instead of on Cobol, said Ernest Escott, a Cobol marketing official at IBM.

As a result, a more comprehensive training program is being put together, and IBM will help customers off-load all or parts of applications to platforms other than its own, he added.

Internet's Cobol maintenance tool gets a boost. See page 67.

Management vendors prepare ATM support

Access technique opens up formerly closed circuits

By Patrick Dryden

In a move that could accelerate wide-scale deployment next year of Asynchronous Transfer Mode (ATM) technology by easing network management, several vendors pledged last week to adapt their monitors and analyzer tools to help maintain ATM workgroups and backbones.

They intend to exploit an access technique—developed with some leading ATM switch vendors—that can open up formerly closed circuits to their probes. Analysis and pioneering users said the resulting troubleshooting, modeling and application development tools will enable evaluators to become real administrators of production ATM networks.

Earlier this month, a dozen vendors banded together as the ATM Monitoring Group. The group set about defining standard switch software that can copy the stream between two nodes in a test port for examination. This capability spurred probe vendors to pledge ATM support by next year.

Good deal

The mass of vendors involved and the crying need for mature management tools make the ATM group's proposal significant, said John McConnell, president of enterprise network management consultancy McConnell Consulting, Inc. in Boulder, Colo.

"This effort will accelerate wide-scale ATM deployment."

—John McConnell, president, McConnell Consulting

"This effort helps minimize the risk of deploying production ATM networks next year," McConnell said. "ATM management tools are immature right now. Evaluators can set up a switch, but managers must be able to watch what goes on across an ATM network in real time."

"Most effort so far has gone into configuring and managing the transport layers that establish the basic ATM connection. Enabling the community of vendors who deliver tools that manage production networks sounds really good," said Lee Thomas, chairman of the management committee of Enterprise Network Roundtable, the user group of the ATM Forum.

Details, details

As the senior network engineer contracted to manage an ATM wide-area network that is scheduled to link six NASA sites by the end of the year, Thomas is looking for a more detailed view of this new network. "We need to look down into the virtual circuits to examine cells as they enter and exit the network. Getting tools from multiple vendors would help spread ATM knowledge," he explained.

At New York's Donaldson Lufkin & Jenrette, Inc., the ATM-based trading LAN will be a year old next month. Senior systems analyst Scott Knapp said he has not needed additional tools for managing the 35 workstations he

handles. "But our firm plans a big ATM rollout in the coming year, so our network managers will need a lot more help," he added.

Now that they see a way to tap into ATM networks, management-tool members of the ATM Monitoring Group are speeding development of ATM network interfaces.

Last week, Network General Corp. unveiled plans to deliver by year's end ATM support for its Sniffer or line of protocol analyzers. Ascom Networks, Inc. and Frontier Software Development, Inc., whose remote-monitor probes profile application traffic, said they expect to test ATM adaptations by then.

At least six ATM switch vendors intend to make ATM circuits available to monitoring gear. Other network testers that expect to benefit include Arcon Networking, Inc.; Hewlett-Packard Co.; Telecommunications Techniques Corp. and Wandel & Gutermann Technologies, Inc.

All the little ATM networks and the sites planning to implement ATM as a pervasive backbone next year will need these tools to grow, said Tim Wilson, an analyst at Datasys, Inc., a consultancy in Herndon, Va.

Troubleshooting networks

Like the telephone system, an ATM network provides switched connections between specific users, called virtual circuits.

A few Management Information Base (MIB) agents—software that tracks the status of various network devices—can monitor ATM low-level activity. Management tools can show how ATM switches and channels are configured, but they cannot see the traffic flowing through a virtual circuit, explained Marc Schwager, product manager at the test division of Hewlett-Packard.

To remedy this situation, a dozen vendors in the ATM Monitoring Group are proposing the ATM Circuit Steering MIB as a standard method for tapping into virtual circuits. This MIB would be embedded in ATM switches or connection managers.

This scheme copies the traffic from one such connection and sends it elsewhere on the network for examination. Once there, a protocol analyzer, application monitor or modeling program can collect detailed information needed to maintain a production network, members said.

This approach should help ATM implementers troubleshoot problems, debug software and balance server loads.

—Patrick Dryden

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News

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WE ASKED: What are your migration plans for Windows 95? Is it important that OEMs continue to bundle Windows 3.1 NT or Windows for Workgroups?

YOU SAID:

Win 95 is known to be buggy and is widely rumored to be only a stopgap product while Microsoft prepares to push NT as the "one and only" operating system. Why would a prudent MIS director squander limited resources on such a questionable product?

• **Blacky Hutton**
hutton@att.net

[We're] taking a slow approach to the Windows 95 migration. It is imperative that OEMs continue to bundle Windows 3.1 to avoid increased administrative costs within our corporation.

• **Paul Dignard**
Manager, Technical Services
Edco Engineering Systems
Edgemoor@edco.com

I have been testing the beta since April and have had very few real problems. When I order new machines, I will definitely order them with Windows 95. I wouldn't waste my time with anything else at this point.

• **Richard Hugg**
IT manager,
United Glaxo Labs
Scranton, Pa.
RHugg@glaxo.com

Windows 95. Heem. The migration path here is going to be slow and will maybe not ever get to the installation point. We are evaluating a company change to the OS's environment at the same time that we are looking at Windows 95. In the near future, the continued preinstallation of the older Windows product is very important.

• **Tom Jones**
Systems Manager
Recommet, Inc.
jones@recommet.com

I see no advantage of using Win 95 over Windows NT. I believe Win 95 is simply Bill Gates' bid to gain market share for The Microsoft Network.

• **Mark Galloway**
Network computing operations manager
The Johns Hopkins Health System
mgallow@washedbld.net

We are going to wait for several months, see how everything heats up and then make the transition slowly and carefully. I think once the initial problems are ironed out, this will be the most promising thing to come out since DOS or the original iLops 1-2-3.

• **Chris Behre**
jbehre_3524@compuserve.com

We will continue to use Windows 3.1 as our major platform, at least through the end of the year. We do not want to be forced into using Windows 95 on newly purchased machines because Windows 3.1 is no longer available.

• **Steven Crie**
Manager of Information systems
CBE, Inc.
scorie@cbe.com

We will be bypassing Win 95 and going straight to NT. Given the cost of any major migration, the desirability of a true 32-bit operating system, the optimization of the P4 for NT and not for Win 95 and Microsoft's positioning of its "High-end" operating system, no other decision made any sense. While we did consider OS/2 Warp, the persistent rumors of IBM shifting it to maintenance-only status and the unrelatable stability of NT made that decision a no-brainer.

• **Kavita L. Shaw**
SHAW@HILLTOPS.HILLARY.COM

I agree that everyone should have the choice between Windows 95 and prior versions when purchasing hardware. However, to those who decide against installing Windows 95: You don't know what you're missing!

• **Donna Hesser**
IT manager
Ore Transport Services
donna@ots.com

Like next year, if then, would be the earliest we would migrate to the new Windows version. I

would much rather sit back and listen for any problems other companies are having than subject my users to them firsthand.

• **Ed Bruce Reppler**
Manager, marketing systems development
Perrault Transportation Co.
Richmond, Va.
Bruce.Reppler@Perrault.com

I have spent too much time supporting Prolog DOS/Windows 3.11 installs and find Win 95 and NT a welcome relief. I would recommend NT for more demanding users and Win 95 for lesser users.

• **David Lottman**
Savillan Group
Atlanta
gilly77@lynn.com

From all observations, Win 95 is no desktops ahead, so let's manage the reality and not ignore it or say it won't happen here this year.

• **Al Leedom**
Senior network architect
Central State Systems Canada Ltd.
leedom@csystems.com

Based on my work with the beta preview release of Windows 95, my plan is to wait as long as possible before migrating. We will continue to use Windows 3.1 as long as it is available. Hopefully, subsequent versions of Windows 95 (95f) will be more stable. Until then, we will require that all new computers purchased include Windows 3.1.

• **Lucy G. Glyn**
Network Administrator
Winick Computer Products America
glyn@winick.com

News Shorts

Lawsuit targets America Online

A class-action lawsuit filed in San Francisco last week claims the 3 million users of America Online are being overcharged for access. The suit, according to one published report, claims AOL charges users for a full extra minute on the network even if the sessions last only one second beyond the previous minute. Users also get billed for extra time spent on-line because of technical glitches, the suit alleges. AOL, based in Vienna, Va., declined to comment on the matter at press time.

Giving away Money

Microsoft Corp. has announced it will give away free money—Microsoft Money for Windows 95, that is. From Aug. 24 through Oct. 31, subscribers to The Microsoft Network will be able to download the upgraded personal finance package for free or order the disks and manual from Microsoft for \$9.95. The plan is to "seed" the market.

"It's much less the cost of the software and much more the transaction fees" that are important, said Chairman Bill Gates.

IBM cleans out backlogs

IBM recently tightened up its backlog for traditional water-cooled mainframes by dropping most "soft" orders that did not have committed delivery

dates within 90 days, sources said. IBM executives and industry analysts said the backlog cleaning does not signal any weakening in mainframe demand, especially when IBM's new line of air-cooled systems is added to the equities. Shipments of mainframe MIPS are still expected to rise on the order of 50% this year.

House hacks tech funding

The House Appropriations Committee last week voted next year's funding for the Commerce Department's Advanced Technology Program (ATP), a pet program of the Bush and Clinton administrations that provides matching grants for industry-led research and development projects. Separately, an Appropriations subcommittee voted all funding for Sematech, the \$100 million research consortium of semiconductor firms and the government. ATP and Sematech partisans are

hoping the Senate will restore funding to the programs later this year.

RadioMail plays price game

RadioMail Corp. in San Mateo, Calif., last week offered a new package: \$39 for 100 messages (100,000 characters) per month. It now charges \$89 for unlimited messaging. It will also waive its \$89 activation fee if subscribers sign a two-year service contract. RadioMail offers a two-way wireless messaging and information service that runs on the RAM Mobile Data USA L.P. Mobile network.

LTV outsources to Andersen

LTV Corp., a Cleveland-based steelmaker, has outsourced management of its information systems to Andersen Consulting in a 10-year deal valued at \$350 million. Chicago-based Andersen will handle LTV's transition from mainframes to client/server technology and subcontract data processing to GE Capital in Stamford, Conn., and network and desktop services to i-NET, Inc. in Bethesda, Md. LTV had total sales of \$4.5 billion in 1994 on shipments of 8.3 million tons of steel.

Ugly quarter shakes Unisys

Unisys Corp. reported a disappointing second quarter, with revenue rising

only 4%, from \$1.44 billion to \$1.5 billion. Net income was \$39.9 million, up from \$22.7 million the previous year. Chief Executive Officer James Unruh moved quickly, recognizing the management structure and announcing that Steve Carr, president of the Information Services and Systems Group, is leaving the company.

SHORT TAKES IBM

This week rolls out the next major version of its NetView for AIX enterprise network management platform. . . SAP AG said its new upgrade process will cut upgrade times from days to hours. Users of R/3 Release 2.2 can use a repository switch process to convert to Release 3.0, expected out in December. . . AT&T Corp. in Murray Hill, N.J., said last week it will ship its Pwa 9 distributed operating system, which is a follow-on to its 25-year-old Unix system, priced at \$350. . . IBM plans late this year or in early 1996 to ship software linking rival OpenDoc and QLE technologies, which enable objects to be used in multiple applications, according to John W. Thompson, general manager of marketing to software vendors at the company. . . Data General Corp. on founder Edman de Castro, who resigned as chairman in 1990 amid board pressure over DG's financial conundrums, has reappointed as chief executive officer at Xenomatrix Inc., a maker of telecommunications products located in Boulder, Colo.

#5
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AT&T to offer multipoint videoconferencing

By Neal Weisberg

AT&T Corp. will try to kick-start the videoconferencing market this week when it turns on the first multipoint voice, video and data service that runs over public telephone lines.

AT&T's WorldWorx system uses bridges to enable up to 22 users at desktop PCs

to videoconference over public Integrated Services Digital Network (ISDN) lines. AT&T began offering point-to-point videoconferencing last year.

Early users said multipoint videoconferencing is exciting, but the technical picture still needs some fine-tuning.

Martha Gorman, manager of the research institute and telemedicine at Bas-

sett Healthcare in Cooperstown, N.Y., just installed an AT&T multipoint system, but her technical people cannot get it up and running. "There have been a few glitches," Gorman said, as she awaited a visit from the AT&T repair crew.

However, Bassett Healthcare has been successfully using AT&T's point-to-point videoconferencing since last June to link

the main teaching hospital in Cooperstown with two satellite hospitals and 17 rural health centers for administrative meetings and medical education.

Gorman said the multipoint system will allow the health care organization to expand its use of telemedicine by joining 12 different sites in one videoconference.

There is another slight problem, however. Nynex Corp. has not brought ISDN to her region of upstate New York. "A Laplander north of the Arctic Circle in Norway can get it, but we can't get it," she said, referring to the widespread availability of ISDN in Europe. So she has had to install two additional 56K bit/sec. lines per location.

AT&T is making efforts on a number of fronts to expand the use of videoconferencing, which represents a high-margin value-add to its traditional long-distance telephone service, analysts said. For example, the company offers videoconferencing as a service, so users can avoid the heavy investment in equipment, said Christine Heckart, an analyst at TeleChoice, Inc. in Verona, N.J.

AT&T has also used its clout to bring several software and equipment vendors under the WorldWorx umbrella to establish standards and eliminate incompatibility, said Bruce Ryan, an analyst at Dataquest, Inc. in San Jose, Calif.



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A better way

By using public telephone lines, AT&T is essentially offering users dial-up video, which addresses the high costs and long delays associated with establishing videoconferencing hookups over private lines, said Allen Suikan, an analyst at the TRCConsult Group in Hackensack, N.J. Robert Mirani, an analyst at The Yankel Group in Boston, said users shied away from videoconferencing because of the poor picture quality and high cost.

Ron Adelman, information services supervisor at Appleton Papers, Inc. in Roaring Spring, Pa., said he is dying to have videoconferencing. "There's a big cost savings once we get it up and running," he said. But Adelman said the videoconferencing equipment AT&T loaned his company a year ago is sitting in the computer room unused. Adelman said the first few times he tried to videoconference, the video broke up, and as other projects grabbed his attention, he has not had time to revisit the system.

Suit, Adelman has not moved on the technology. He said he would take the videoconferencing again "if they can get something in here that would work."

AT&T enhances phone-to-LAN connections. See page 56.

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Bay will embed code in NT Server

By Laura DiDio

Bay Networks, Inc. will embed a portion of its remote access routing code into Windows NT Server late next year under an agreement with Microsoft Corp. announced last week.

The deal means users will be able to buy a routing-enabled Windows NT Server instead of having to buy both a server and a router. This setup will be particularly valuable at remote offices.

Users such as Lance Boxer, senior vice president of data networking at MCI Communications Corp. in Dallas, said his company will save money. "We'll be able to save on the cost of buying routers for our 3,500 branch offices in the U.S. and 150 international offices," Boxer said. Pricing for remote routers usually ranges from \$2,000 to \$10,000, he added.

Microsoft said Bay executives said the two firms will jointly develop a routing application programming interface (API) and one means of managing routers.

What it delivers

Embedding Bay's routing code into the Cairo version of Windows NT Server will let Microsoft deliver messaging, telephony and fax services along with a strong suite of application services to provide us-



ers with a turnkey solution for remote offices, said Gary Bowen, Bay's executive vice president.

It will provide mobile and telecommuting workers with dial-in access to Windows NT Servers. Bowen added. It will also let Bay and third-party developers provide a range of routing protocols based on the industry standard Open Shortest Path First (OSPF) protocol.

Bay's routers use OSPF, so Windows NT Server will, too. This means customers can use the

forthcoming routing API to connect their server farms to TCP/IP frame relay, Integrated Services Digital Network and the Internet, said Larry Kraft, vice president of marketing at ISDN Systems Corp. in Vienna, Va.

The routing APIs are due out in the Cairo version of Windows NT Server Cairo, which adds object orientation to NT, is slated to ship in the second half of next year, said Paul Stanton, marketing manager at Microsoft's Business Systems Division.

Lee Doyle, vice president of the LAN group of International Data Corp., a market research firm in Framingham, Mass., agreed. Although the pact between Bay and Microsoft is not "revolutionary," it does help users by broadening the capabilities of Windows NT Server "because the deal provides for both routing among remote offices and access to the Internet," he said.

This fall, Microsoft will host a meeting to start nailing down the API specifications. The meeting is open to all third-party suppliers. Stanton said, "beta versions of the API routing code will be available in mid-1995, and it will be released in Cairo when that product ships," he added.

Review of Windows NT Server

See page 47.

computers at once via modem, networker cable.

Robert Landolfi, director of sales technology at Scott Foresman, a publisher in Glenview, Ill., said LapLink Host allows him to fix computer problems remotely for 190 employees around the country without giving users access to sensitive functions.

Limiting access

"It's a more sparse version of LapLink for Windows, which is what I need," Landolfi said. "I have LapLink for Windows on my machine, so I can show staff to them over the phone. But with LapLink Host on their PCs, they can't get in to the network and goof things up; they can't dial out and get a virus or something."

"With this product, they have solved a very important issue for the huge group of early adopters of Win95," said Tim Bognan, an analyst at Centrite Strategies Consulting in San Jose, Calif. "They basically exploit a hole that is left by Microsoft."

LapLink's Host is available through resellers at a suggested price of \$89.95 per user, and a 10-pk license is available for \$499.95.

Cellular carriers share net access

By Mindy Blodgett

Mobile customers of GTE MobileNet, Inc. and Ameritech Cellular Services now have access to both networks, thanks to an agreement between the two carriers announced last week.

This marks the first interoperability pact between Cellular Digital Packet Data (CDPD) carriers, and observers said many more such deals are needed for customers to get CDPD's full benefit. In the short term, however, this alliance will benefit GTE/Ameritech users who would like to roam farther from home.

Starting immediately, a GTE customer from the carrier's Houston and San Francisco networks, for instance, can use the Ameritech networks in Chicago and Detroit and vice versa. The agreement will grow to cover more cities when the carriers develop more CDPD networks as their respective gear is made to interoperate.

Each network will retain its own rate structure, but all the charges will appear on a single bill sent by the user's home service provider.

More to follow

The agreement is the first of many such pacts needed to achieve the nationwide wireless communications coverage CDPD operators have long been promising, industry observers said. The deal was announced at the recent annual CDPD Forum's membership meeting in Philadelphia.

"They are carrying out one of the great promises of the cellular carriers: that they can link together," said Daniel Merriman, an analyst at BGS Strategic Decisions in Norwell, Mass. "This is an important first step in the building of a true nationwide network, and hopefully there will not be a flood of such agreements."

That remains to be seen, but negotiations are under way among CDPD players, including the following:

- GTE in Atlanta is discussing similar agreements with other carriers, officials said.
- Bell Atlantic Nyneco Mobile in Bedminster, N.J., is talking with other companies, according to executives there.
- Officials at McCaw Cellular Communications, Inc., AT&T's wireless division in Kirkland, Wash., would not comment on the status of negotiations but said such agreements are important.

Indeed, the lack of interoperability is at least partly to blame for CDPD's snail-pace growth, observers have said. CDPD is a packet data technology using cellular infrastructure, which supports short, bursty data transmissions.

Northern Telecom and Gstek deploy alternative wireless networks

See pages 53 and 56.

Switched-on approval

The CDPD Forum recently approved specifications defining a hybrid of CDPD and circuit-switched data technologies.

Users will be able to access the CDPD network through a circuit-switched data connection via a dual-mode modem, which will incorporate the features of both technologies.

Both CDPD and circuit-switched data use the cellular network to transmit wireless data. The difference is that circuit-switched data uses a dedicated wireless connection that can support the transmission of large data files. CDPD, suited for the transmission of short data files, adds packet data capabilities to cellular networks and does not require a dedicated line.

—Mindy Blodgett

Remote link will tie generations of Windows

By Mindy Blodgett

Users looking for a way to remotely connect Windows 95 and Windows 3.x PCs will get a break this week when Traveling Software, Inc. ships LapLink Host. Microsoft Corp.'s Windows 95 has built-in software for transferring

ring files between the laptop and the network.

However, LapLink Host will work between computers running Windows 95 and those with earlier versions of Windows, something Windows 95 does not do.

LapLink Host is a streamlined version of LapLink for Windows that removes the out-of-bound calling capabilities for end users, thereby adding security and removing headaches for network administrators.

Remote repairs

The new software complements the company's popular LapLink for Windows product, which gives technicians the power to provide support and repair along with training on as many as 15

Off-site control

LapLink Host, which allows technicians using LapLink for Windows to remotely manage a user's PC via phone lines or a modem, does the following:

Allows connections between Windows 95 and earlier versions of Windows, something Windows 95 does not provide

Prevents outbound customer-host PC connections and provides password protection

Increases file transfer rates with a new technology that compares old and new files, transferring only the changes, not the entire file

Lets technicians control as many as 15 screens at once

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Easing the migration to Windows 95

Microsoft and OnDemand's distribution products said to reduce costs and time

By Cheryl Gerber

Microsoft Corp. and OnDemand Software, Inc. are introducing software distribution products that, when combined, will lessen the expense and time needed for migrating to Microsoft's Windows 95.

In two weeks, Microsoft will unveil an enhanced version of Systems Management Service—SMS 1.1—that includes a set of programming interfaces for users to write programs with the SMS database. The new version also adds a deployment kit and documentation with sample scripts that show how to use SMS to deploy the Windows 95 operating system.

For its part, OnDemand late last week introduced WinInstall 3.0, an applications distribution product that is integrated with SMS 1.1. WinInstall 3.0 automatically distributes 16- and 32-bit applications on Windows 95 and reports on whether the applications have been successfully installed.

Although it is possible to use SMS to distribute both the Windows 95 operating system and its applications, the applications distribution process is made considerably easier by joining the products.

Time-saver

WinInstall 3.0 is meant for customers who want to set up hundreds of desktop units without undergoing the time-consuming process of writing scripts, said Michael Emanuel, a Microsoft SMS product manager.

FedEx Corp. in Memphis has already used WinInstall 3.0, the previous version, to install 16-bit applications on Windows 95. "It worked without a hitch," said Joey Cartwright, FedEx technical adviser.

Cartwright is beta-testing both Windows 95 and WinInstall 3.0. But he does not have any 32-bit applications to install on Windows 95, so he could not comment on how well WinInstall 3.0 might do with installing 32-bit applications on Windows 95.

WinInstall 3.0 runs on Windows 95 and Windows NT and all versions of Novell, Inc.'s NetWare, Banyan Systems, Inc.'s Vines, IBM's LAN Manager and Digital Equipment Corp.'s Pathworks.

WinInstall 3.0 pricing starts at \$495 for a 30-seat license; the upgrade price from WinInstall 4.0 is \$149. Pricing for SMS 1.1 will be available when the product is announced in two weeks.

News

Symantec adds access control tool

Administrative product facilitates shift to Win 95

By Patrick Dryden

Symantec Corp. will do its part to ease migration to Microsoft Corp.'s Windows 95 this week by offering Network Administrator, a way to control user access to servers and applications via custom interfaces.

The Norton Desktop Administrator product differs from other naming and Windows interface tools in its security options and support for heterogeneous network environments, Symantec officials said.

The tool targets large networks where "IS has to take control over diverse environments that grew up without guidance," said David Oldfield, product management director at Symantec in Cupertino, Calif. "They can standardize the network interface to assert control in a helpful way, so they don't come on like Atlas the Lion."

Saber rattling

Beta tester Kevin Sackler said he liked the software's scripting capability, which lets his support staff "create the exact interface we want," and also his network awareness, which filters users by groups defined by Novell, Inc. NetWare.

The commercial applications manager and his four-person team manage 63 software packages—including in-

stallation, access via a standard menu system and user customization—for the 8,300-user network at Hughes Missile Systems Corp. in Tucson, Ariz. They rely on the Saber Menu System from Saber Software Corp. in Dallas to lock the Windows desktop configuration for each workgroup so users will access the appropriate server, Sackler said.

But Sackler said he has evaluated other control tools because the parent corporation is in the process of selecting one suite of desktop management software for all networks. He sees Symantec's support for all Windows versions as a plus.

"We know some users will immediately install Windows 95 when it ships and then discover the Saber menu was true," Sackler said. "Norton Desktop Administrator would let us create separate interface options for Windows 3.1, Windows 95 and Windows NT and even let us import Saber source code to make displays resemble what

users currently see."

Administrators can run Norton Desktop Administrator alone or through a common console shared by other programs in the Norton Administrator for Networks suite.

Norton Desktop Administrator loads from a server or from a local hard disk. Users receive their defined interface according to network login, not a physical address, so their privileges will not change, Oldfield said.

Symantec is also expected to announce Windows 95 versions of three of its other popular utility products—Norton AntiVirus, Norton Navigator and Norton Utilities. The trio will be available several days prior to Microsoft's scheduled debut.

Norton Utilities sports a host of new features, including System Doctor, which runs in the background and keeps users updated on system resources, and Space Wizard, which lets users delete files by specific criteria such as file size, date created and user name.

Easy access

Key features of Norton Desktop Administrator:

- Hardware supported:** Desktop or portable PCs running Windows 3.1, Windows 95, Windows NT, OS/2 or Windows or DOS
- Networks supported:** Novell's NetWare 3.x and 4.x with NetWare Directory Services, Banyan's Vines with ServerTalk, Microsoft's NT Server or LAN Manager, IBM's LAN Server, Digital's Pathworks
- Price range:** \$475 for 10 users to \$675 for 250 users

Users may sneak in copies of Win 95; can IS keep up?

CONTINUED FROM COVER 1

some situations. For example, if a maverick user installs Windows 95, and it does not work with the company's electronic mail system—a situation that Wegman said already occurred for two of his Windows 95 beta users—this constitutes a problem that needs IS attention immediately.

However, those same IS managers say they have made no preparations to beef up internal help desks.

"I don't think most people are prepared [for Windows 95]—I know we aren't," said Doc Barker, associate professor of information sciences at Gonzaga University in Spokane. Josh Barker is responsible for 85 PCs in the university's business school.

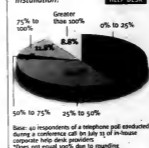
Yet at the \$88 street price for the upgrade from Windows 3.x, many users will buy Windows 95 out of petty cash, bypassing corporate purchasing channels.

Problem calls to vendor and internal corporate help lines always shoot up with any new software release, particularly system software, as users discover major and minor incompatibilities with existing software and hardware. Another surprise awaits users who take work home. When they

use Windows 95's long file names, they will discover how inscrutable those names can be when they do not display under Windows 3.1, IS managers said.

"As consumers, [our users] will probably try to drive us to Windows 95 before we want to go because they'll have it on their desktops at

How much do you expect call volume to help desks to increase after Windows 95 installation?



Source: The Burt Group, Colorado Springs

home," said Richard Retta, senior technical analyst at Wells Fargo Bank in San Francisco.

Many observers say Windows 95 promises to relieve technical support burdens over time because of its support for Plug and Play and its more intuitive user interface.

Additionally, although Microsoft technical support is free for the first 90 days, those help lines are bound to be jammed, company executives agreed.

"I think if Windows 95 is going to run into a problem, it's because the support structure is going to fail," said Hank Coleman, president of Twenty20 Visual Systems Corp. in Dallas, which develops and deploys Windows-based point-of-sale software for hotels and restaurants.

The message, Coleman and others said, is get prepared now, whether the plan is to roll out Windows 95 next year or not. End users are not prepared to wait.

Senior editor Cheryl Gerber contributed to this report.

Imaging market gets focused on NT

Wang, FileNet acquisitions signal move toward expanded product lines

By Tim Ouellette

Sensing more user interest in Microsoft Corp.'s Windows NT for imaging, market heavyweights FileNet Corp. and Wang Laboratories, Inc. went shopping last week to broaden their product lines in this area.

Billerica, Mass.-based Wang bought Sigma Imaging Systems, Inc., which is shipping its OmniDesk imaging and workflow software for NT. And FileNet in Costa Mesa, Calif., bought Watermark Software, Inc. and its Enterprise Edition imaging-only software (see chart).

Users and analysts agreed that Wang's purchase strengthens its April agreement with Microsoft to provide an image viewer as part of future versions of Windows 95 and Windows NT. Sigma's software will be offered as a back-end server.

"The [Sigma] alliance with Wang and Wang's alliance with Microsoft puts us over the top," said Greg Goldman, chief information officer at The Chase Manhattan Bank NA in New York, a Sigma user. "The combination is very powerful."

FileNet buys Watermark for \$65 million and gets the following:

- Low-cost Enterprise Edition Windows NT software (\$250 to \$500 per seat)
- A fast-growing customer base (more than 75,000 seats)
- A distribution channel of 400 resellers

Wang buys Sigma for \$50 million and gets the following:

- OmniDesk, an imaging and workflow package for NT that complements Microsoft's BackOffice
- A strong customer base, including Chase Manhattan Bank and Consolidated Edison
- A marketing deal with Unisys, including a planned Unix version of OmniDesk

Expected in Windows 95 by year's end, the image viewer, dubbed Image-Vue, will let users create image documents through scanning and faxing.

"The impact of distributing imaging with Windows 95 on everyone's desktop really gives a big impetus to providing NT back ends," said Bruce Silver, principal at Bruce Silver Associates in Weston, Mass. This is because more users will be exposed to imaging and will turn to a complementary NT back-end server when they want to expand imaging beyond the desktop client, he said.

Imaging software places paper documents in electronic files for on-line viewing and extraction of data, while workflow software automates and tracks the flow of work, including image files, through an organization.

Users have shown an interest in the NT platform for imaging because of its relatively low price per user seat and ability to provide a consistent environment from the server to the client, analysts said.

For example, sign-ups for Watermark's Enterprise Edition have driven

the Burlington, Mass., firm's growth up 85% since the product's April unveiling.

But users often remain on the fence, unwilling to pay a high price for a large Unix-based imaging system or go with a smaller vendor. Users gravitate to large companies where they feel that they have

a standard platform," said Connie Moore, director of document, imaging and workflow strategies at BIS Strategic Decisions in Norwell, Mass.

Some Wang users remained cautious of the company's platform strategy, which analysts said points to NT emerg-

ing as Wang's strategic direction.

Wang Chief Executive Officer Joe Tucci stressed that the company is still firmly dedicated to the Unix platform.

"They need more of a focus strategy, especially in 'workflow' because that must go across all platforms in a company," said Lawrence DeBlasis, chief information officer at Life Reinsurance Corp. of America in Stamford, Conn. "We want to use a strategic product over the long run."

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Digital makes play for Web business

By Michael Goldberg

Digital Equipment Corp. this week is making a more aggressive play for business on the World Wide Web by packaging a suite of Internet-friendly software on three of its Alpha machines.

The Maynard, Mass. company also plans to unveil on Wednesday an upgraded AlphaServer 2000 computer powered by a 250-MHz second-generation 64-bit Alpha RISC microprocessor. Company officials said the \$34,000-add-on workgroup server runs on Digital Unix, OpenVMS and Microsoft Corp.'s Windows NT. It handles up to 675 transactions per second, 40% more than the previous generation.

Analysts said both initiatives are part of a broader effort by Digital to catch up to rivals such as Hewlett-Packard Co. and IBM in the server arena, and Sun Microsystems, Inc. and Silicon Graphics, Inc. in Internet applications.

Digital is making a "re-entree" effort to improve performance vis-à-vis its rivals, particularly HP. And [the price relief] renders them competitive with HP and Compaq at the low end as well," said Terry Shannon, an analyst at Illuminata, a market research firm in Hollis, N.H.

Digital officials said they hope to create ties with more businesses involved in setting up Web marketing sites by providing networking products on three Alpha models. These products—Netscape Communications Corp.'s server, Telnet, Simple Mail Transfer

Protocol (SMTP) and other offerings—are loaded on a compact disc.

The prepackaged software should help HLC Internet, Inc., an Irvine, Calif.-based consultant that sets up Web sites for corporations. Dennis Kim, HLC's vice president of marketing, said the company uses two Alpha servers to run its own Web site and run pages for some clients. HLC prefers to assemble and manage Web sites using Digital machines because it can charge a flat rate of \$800 per month for hardware and transmission fees, Kim said. Vendors often charge separate fees for the different services, he said.

Stiff competition

James Greene, an analyst at Summit Strategies, Inc. in Boston, said, "Sun rules the Internet, but DEC has a pretty extensive service and support offering. Now you're seeing those types of programs shrink-wrapped. They're... enabling their resellers to sell."

Suit. Digital has a way to go before it wins front-runner status among Web site contractors. For instance, Gary Teter, a partner at Bulldog Beach Interactive in Seattle, said most of his customers use other vendors' machines to power their sites. Digital's marketing efforts have not struck Teter yet, but other vendors' efforts have. "SGI recently sent me a video aimed directly at people like me who are producing Web pages," he said.

Alpha finds dubious niche as Digital-only chip. See page 11.

DEC 'net

Digital's Internet Alpha servers range in price from \$7,495 up to \$19,995

EACH SERVER COMES WITH THE FOLLOWING INTERNETWORKING COMPONENTS:

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Intergraph cuts staff in attempt to bounce back

\$22 million loss prompts 6.5% layoff

By Jean S. Bozman

Intergraph Corp., a \$1 billion graphics workstation company that has struggled through 11 losing quarters, said last week it has laid off 600 of its 9,200 employees in an effort to return to profitability by year's end.

Intergraph Chief Financial Officer Larry Laster pinned at least some of the blame on results of the firm's 1992 decision to move from Unix RISC systems to Intel Corp. Pentium running Microsoft Corp.'s Windows NT.

Pentium hardware carries a much lower profit margin than traditional Unix workstation systems, he said.

"We couldn't grow sales fast enough to offset the decline in margin," Laster said. Meanwhile, the firm ran up extra costs providing migration tools and maintaining in-house Unix and NT technical expertise.

A greater niche

Industry analysts said Huntsville, Ala.-based Intergraph had planned to lead the Unix/RISC pack in going to NT systems for computer-aided design (CAD) and other engineering applications. But it found itself in a narrow niche and began selling CAD software to users of Intel PCs and PC servers.

Richard Chu, managing director at Cowen & Co. in Boston, said Intergraph had taken action previously to restore profitability. It recently gained \$5 million by selling its Quintus Corp. division and now plans to save \$100 million in the next year.

Tough times

Intergraph took a \$7.5 million restructuring charge for its second quarter, which ended June 30, and had an operating loss of \$22 million on \$420 million in sales.

Windows NT vs. 95

CONTINUED FROM COVER 1

ny of Southeastern utilities such as Alabama Power and Georgia Power, has already taken a step toward moving to NT. It just ordered 5,000 NT workstations to run its Customer Information System on an NT version of a popular computer-aided design package.

Southern is testing NT for use on the desktop in other areas of the company as well. "I think the best bet in the long run will be to go directly to NT," Littleton said.

Full steam ahead

Knowing that NT will share the Windows 95 user interface within a year, Littleton and others in engineering, client-server development or financial services are considering installing NT now to get the full power of a 32-bit operating system.

"We won't implement Windows 95 for a year. If NT and Windows 95 have the same interface in one year and if the NT desktop is more tightly integrated with NT as a server, then it'll make more sense for us to go with NT on the desktop rather than Windows 95," said Tim Trimble, a senior business analyst at Hunter Industries, Inc. in San Marcos, Calif.

"Microsoft recommends NT desktop for applications that are process-intensive, but we wonder why not just put that on the desktop and take advantage of the

better performance that's here today? Three to five years down the road, it'll all going to be NT anyway," Trimble said.

"We're running NT, OS/2 and Windows 95 side by side. We'll compare and then decide [which to go with] later this year," said K. Wilson, a senior microcomputer analyst at the company. "There's still 16-bit code in Windows 95, which limits its performance. We may leapfrog Windows 95 and go to NT or OS/2."

Pro-NT

Microsoft is aware of the pro-NT sentiment on the desktop. "We're seeing more wins where it's NT at the client level, though it tends to be where they already have NT at the server," said Steve Ballmer, executive vice president of worldwide sales and support at Microsoft.

Ballmer noted that the NT client sales were installations of 2,000 to 15,000 users.

"It takes a lot of those to add up to what we'll sell on Win 95,"

Last call

Users can expect "one more major round of Windows" to be built on the Windows 95 code base before Microsoft refocuses "just on Windows NT in terms of future desktop [operating system] products." That is the word from Chairman Bill Gates, who briefed financial analysts last week. Gates said Windows 95 will be out in two to three years and run on RM-byte PCs. Another major release of the Office suite will come by the end of June 1997. —Stuart J. Johnston

he noted.

"If corporate users move to NT on the desktop, it's because they need it now and the applications require it. But it won't cut into Windows 95 in the long run," said Mike Rothman, an analyst at Meta Group, Inc., a consultancy in Stamford, Conn.

The pros


Windows NT for the desktop

- Has a high level of security
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Windows 95 for the desktop

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Source: Current Corp., Inc., Stamford, Conn.



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Workgroups 3:11 preemphatic, HP mouse and keyboard. Source: 1994 J.D. Power and Associates PC Customer Satisfaction Study™ Study conducted among business users and based on 1,528 users.
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First Virtual puts new spin on ATM

Turnkey package delivers high-speed videoconferencing to the desktop

By Bob Wallace

In an effort to show users that there are uses for Asynchronous Transfer Mode (ATM), start-up First Virtual Corp. (FVC) has introduced a turnkey package that delivers high-quality video over 25M

bit/sec. ATM links to the desktop

The package comprises FVC's latest ATM switch, special ATM adapters for PCs, a multimedia operating system and a gateway. Together, these enable users to extend in-house videoconferences to users at distant sites (see chart).

"ATM acceptance to date has been low because users have struggled to find uses for the technology," said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J. "FVC has stepped up and delivered a package that supports videoconferencing over ATM, while other ven-

dors focus on pumping out ATM networking equipment. That makes FVC's strategy unique."

Although the technology spotlight has been fixed on high-speed switching technology for years, users have stayed away because the products supported ATM and not specific applications. Possibly with that in mind, FVC announced a turnkey package for supporting multimedia applications over an ATM foundation.

"Their entire approach is really bene-



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* Configuration based on 100 Mbit/sec. ** Requires base Seer+HP software license.

ficial to users because they're interested in ATM technology but need end-to-end solutions, not just [various] components," said Mike Martinez, a technology assessment consultant at St. Joseph's Health Systems in Orange, Calif. "We're developing a multimedia training application for a video network, and First Virtual offers everything we need."

"They give you everything you need except the actual applications," Martinez added. "But that's not a problem because you can build applications on their technology [foundation]."

Another issue has been price. FVC addressed that recently by rolling out an ATM workgroup switch that can support eight

25M bit/sec. ATM ports, two high-speed uplinks (100M bit/sec. or 155M bit/sec.) and one Ethernet port at a total price of \$5,300.

The FVC package also includes everything needed to lay the foundation for a seven-user wide-area videoconferencing running at up to 384K bit/sec. for \$22,000, a price that Nolle said users are willing to pay. "They've already set the stage by making their switch to a low-cost system, and that's one big key to user acceptance and implementation of ATM products," Nolle said. "The other issue has been what to use ATM for."

St. Joseph's plans to use First Virtual's Integrated Services Digital Network (ISDN) gateway, which is essentially a souped-up PC, to bring remote sites with ISDN Basic Rate Interface lines into videoconferences. "That's a big plus," Martinez said.

Bring some extra chairs

Research house TeleSpan Publishing Co. estimates that the number of videoconferencing "seats" will increase from 30,000 last year to 300,000 in 1995.

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Take two CIOs, can them in the morning

Pharmaceutical industry sees high turnover among technology chiefs

By Joseph Maglitta

What looked like a dream job in the early 1980s—chief information officer at a major pharmaceutical company—may seem more like a poison pill today.

In the past two years, large drug mak-

ers—including Eli Lilly & Co., Pfizer Corp., Bristol-Myers Squibb Co., Upjohn Co. and McKesson Corp.—have all placed new faces in their top information systems jobs.

"It's a changing of the guard," said Saul Kaplan, head of Andersen Consul-

ing's medical products group in Boston. "The executives' and leadership styles that brought the industry where it is today are not necessarily the same leadership team that is going to take the business to its next plateau."

Some former drug technology chiefs

went voluntarily; others didn't. Several, such as Eli Lilly's Tom Trainer, became the company's first CIO.

The new breed of drug industry CIOs hail from industries as diverse as athletic footwear to distilling and food.

Industry observers say bringing in outsiders makes sense. As drug makers begin to more resemble other consumer industries, they want to import experienced technology leaders, analysts say.

"The external environment in health care has shifted dramatically," an Eli Lilly spokesman said. "We need outside help to anticipate the needs of this evolution."

A sampling of new IS leaders in the past 24 months include the following:

- Jack M. Cooper, former CIO at Seagram Corp., now first CIO at Bristol-Myers, an \$11 billion New York firm. He replaced Patrick J. Fortune, who left the company last year.
- Tom Trainer, head of IS at Eli Lilly in Indianapolis. The 24-year veteran was formerly CIO at Reebok International Ltd.
- John R. Schultz, named vice president of information technology and CIO at Upjohn. He replaces Jack Longman at the Kalamazoo, Mich., firm.
- Demetri Lappas, CIO at Warner-Lambert Co. in Morris Plains, N.J. He was formerly CIO at Borden, Inc.
- Alfred J. Battaglia, group president and CIO at Becton Dickinson & Co. A veteran of the \$2.6 billion company, Battaglia will lead worldwide corporate procurement and development of advanced supply chain management outside the U.S. He was previously group president of supply chain management at the Franklin Lakes, N.J. firm.
- John W. Fitzgerald, vice president of IS at McKesson Corp. in San Francisco.
- Cathy O'Connor, vice president of corporate information technology, and Vita Cassano, vice president of systems and market research, at the U.S. Pharmaceutical Group of Pfizer, Inc. in New York. Bill Mullin, vice president of corporate IS, was transferred.

Organizational lines also are changing. In May, for example, Upjohn relocated IS under a corporate executive vice president and chief financial officer who runs several business units and the corporate quality center.

Changes are not confined to the top ranks, either. IS managers from outside pharmaceuticals and from more varied business backgrounds are also becoming more common.

At Ciba-Geigy Corp., Dr. Thierry Barabou, a physician, serves as a re-engineering leader and international project leader for medical data systems. He has a doctorate in medical information sciences from Stanford University and 15 years of IS experience.

Some long-timers held strong. At Abbott Laboratories, Kenneth W. Farmer retained his post as vice president of management information services and administration. He has held the job since 1985.



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says Dana DeNardi, executive vice president and co-founder of DB/EXPO.

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CA-Unicenter/The Next Generation takes flight

By Thomas Hoffman
[E]ditorial

Imagine being able to manage your company's computing enterprise with a joystick, skating ~~anyway~~ through a three-dimensional view of an IBM SNA network in New York from your cubicle in Kahnawake, Mich.

That's what many of the 15,000-plus

Associates International, Inc. users at CA-World '95 experienced here last week. CA staged a dazzling display of the virtual reality and 3-D graphical user interfaces that the software titan is developing as part of CA-Unicenter/The Next Generation (CA-Unicenter/TNG), a forthcoming revision of the distributed systems management suite. Delivery is scheduled for the third quarter of next year.

CA's Real-World Interface, which the Iliad, N.Y., software company is developing with the aid of virtual reality pioneer Jaron Lanier, is intended to provide users with an animated business process view of payroll, human resources and a slew of other core applications.

"Just because you can plug a toaster and a computer into the same outlet, it doesn't mean that the computer knows when the toast is done," said Charles B.

Wang, CA's chairman and chief executive officer. CA-Unicenter/TNG is being designed to enable users to graphically troubleshoot systems, network, database, printer and other networked components, Wang added.

Indeed, some users recognized a business value in using the Mortal Kombat-type interface to drill down through their geography-

ically dispersed systems to isolate network problems. The Real-World Interface "could help us to define those hidden costs in distributed systems," said Kari Ottens, managing director of the Norwegian Government Computer Center in Oslo.

Interest rises

Still, most potential CA-Unicenter/TNG customers expressed more immediate interest in the end-to-end management capabilities that CA is working on through partnerships with UB Networks, Inc., BMC Software, Inc. and others.

For example, CA is integrating UB Networks' NetDirector network management technology into CA-Unicenter as the founda-

tion for its end-to-end enterprise management strategy. Those features — to be phased into the CA-Unicenter suite starting this fall — will be mapped with other software components, such as IBM's Patrol and Patrolink event notification/smart agent software, which just began shipping on CA-Unicenter.

Virtual gains?

"Virtual reality is very appealing, but I'm not sure how that's going to provide demonstrable productivity gains," said Andy Mullins, director of NetworkMCI Services Information Technology at MCI Communications Corp. in Colorado Springs. "End-to-end management is our closest goal," he added.

CA-Unicenter partners will receive software developers' kits in the first quarter of 1996 so they can begin integrating

their products into the multi-tier CA-Unicenter/TNG package. Product pricing will not be announced for at least six months, according to Yogesh Gupta, CA's senior vice president of product strategy.



MCI's Andy Mullins says he likes CA's end-to-end management capabilities.



Former President George Bush checks out the display at CA-World.

Points of light

Former President George Bush had the crowd at CA-World '95 in stitches last week by impersonating an impersonator: he delivered an amusing parody of Saturday Night Live star Penn Jillette's famous act. The keynote speaker appeared tanned, rested and considerably more at ease than he was during his unsuccessful 1992 presidential re-election campaign.

Bush shared a few thoughts on recent technological developments such as the Internet. "I'm not what you would call a regular computer user on the information superhighway — I'm more of a hitchhiker," he joked.

On the intellectual property agreements reached between the U.S. and China earlier this year, including Internet access into China, Bush said, "It's just one more example showing that, little by little, the barriers that separate us are being negated by technology. In this case, the next frontier is cyberspace."

On the U.S. Justice Department's recent aggressive stance involving proposed mergers between high-tech companies, such as Computer Associates and Legat Corp., Bush sounded a laissez-faire note. "I don't think big [business] is bad," he said. "If these mergers bring prosperity to employees and to the families, then the government shouldn't intervene." — Thomas Hoffman

Bypassed again? IS often left out of Web planning

By Ellis Hooker

Who is the head cook at Microsoft, Ragu's popular WorldWideWeb site? Not the information systems department, which was merely made "aware" of the project before the culinary Web site was launched in March by Ragu Pasta Sources, a unit of Trumbull, Conn.-based Van den Bergh Foods Co.

Who runs Planet Reebok Web at Reebok International Ltd. in Stoughton, Mass.? Not IS. The marketing group owns the site, which was built by an outside contractor.

In much the same way that the first PCs were swept into companies in the 1980s, thousands of corporate Web pages are sprouting on the Internet — without the prerequisite of IS's blessing.

"There are numerous examples of where these initiatives have been taken by marketing, or PR, or someone else [Internet] savvy than the traditional IS organization," said Benn Kotenski, a George S. Craft distinguished pro-

fessor of business administration at the Ginzburg Business School at Emory University in Atlanta.

This is not necessarily a bad thing, according to Kotenski, who has been studying organizational IS issues since the 1970s. It is proper that content on a

Web page should be "owned" by the department that is naturally responsible for it, he said.

Yet, Kotenski is quick to point out that hyping IS on a Web project can quickly turn problematic on three fronts: making sure a Web server attached to a corporate LAN is secure; coordinating that server to legacy systems; and developing new applications for the Web server.

Because of this, a progressive company now have task forces composed of IS, marketing and other line units

"Our task force has 10 people on it and meets once a week," said Michael Cryz, an infrastructure engineer at CNA Insurance Co. in Chicago. CNA also has come up with infrastructure policies to prevent departments from attaching to the public Internet, although within the coming months, virtually any department will be able to set up a Web server on CNA's internal TCP/IP network.

A game of tug-of-war

How IS can keep a seat at the Internet table:

- Recognize the Internet
- Take on a missionary role
- Establish a cross-functional team
- Create a SWAT team with IS
- Expand staff with marketing communications or advertising specialists

such as CNA have quietly made substantial investments in deploying Internet applications on their corporate LANs.

A multifunctional task force manages Hewlett-Packard Co.'s Web presence, said Randall Whiting, worldwide manage-

er of electronic marketing at HP in Palo Alto, Calif. "I have a technology team and a marketing team reporting to me," said Whiting. He also contracts with HP's corporate information technology group as a supplier. However, he reports to the director of worldwide marketing, not HP's chief information officer.

Whiting's mix of skills is just what companies seem to be looking for to fill their "Director of Electronic Commerce" positions. Again, the challenge to IS professionals will be competing effectively with technologically savvy marketing executives who may also want the job.

While it is rare that IS lends the charge on the Internet, it can happen.

Les M. Otis, director of merging technologies at Holiday Inns Worldwide, was the catalyst for the hotel chain's launch last month of a Web site that links travelers to its reservation system.

The Holiday Inn site is managed by a cross-functional team that meets twice a week and represents virtually every line unit in the company.

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Computer Industry

Record gains mark second quarter

But multiple factors send stocks on wild ride

By Computerworld staff

The computer industry, which has led a mostly skyrocketing stock market, last week saw record quarterly reports from key members spark a long expected landslide in stock prices.

"What you've got is a market benefiting from reasonable economic growth... ramping up for Windows 95 and a new factor called the Internet," said John Jones, an analyst at Salomon Brothers, Inc. in San Francisco. But that did not seem to matter as robust earnings reports fell on seemingly dead ears.

Two firms large and small saw sales boom last quarter (see chart). But as heady earnings streamed in, industry bellwethers IBM and Microsoft Corp. tried to lessen investor excitement about future gains, saying it would be hard to match recent market performance.

Investors, partially in reaction to these factors, responded with heavy losses across the board, causing a downturn worse than the one at the end of May. In May, the NASDAQ Index, which comprises mostly tech stocks, dropped all most 20 points, according to analysts; last Wednesday, the index had dropped 53 points in two days.

For example, Microsoft's stock dropped as much as 12 to 13 points last week before rebounding. That happened when company executives warned that the stock was wildly overvalued, that Mi-

crosoft will once again raise its investment in research and development next year and that sales of Windows 95 and associated applications are likely to slow in late calendar 1995. After plummeting to 94 1/2, the stock was hunk up to 96 1/2 by Thursday.

"Microsoft is making every move possible to constrain their growth rate by deferring up-front revenue from sales of Windows 95 and Office 95 and building up spending," said Stephen McClellan, an analyst at Merrill Lynch & Co. in San Francisco. "But when you hold all the remarks down, they still come out with 25% earnings growth."

Two in a row

IBM bulldozed its way over Wall Street forecasts for the second straight quarter. The results were driven in part by a 33% increase in the company's services business.

Mainframe revenue dropped in the second quarter but "certainly could have a shot at" finishing the year flat with its 1994 level, said Jerome York, IBM's chief financial officer. While System/390 prices continue to fall, York said IBM expects 1995 shipments of mainframe capacity to zoom up to 250,000 MIPS—a staggering 57% increase over last year's record of 156,000 MIPS.

York noted, and analysts agreed, that the IBM PC Co.—which has been IBM's

COMPANY	REVENUE APRIL THROUGH JUNE	PERCENT CHANGE FROM 1994	PROFIT/LOSS APRIL THROUGH JUNE	PERCENT CHANGE FROM 1994
Apple	\$2.57B	20%	\$203M*	25%
Compaq	\$3.5B	40%	\$264M	17%
Computer Associates International	\$577.5M	21%	\$88.5M	28%**
EMC	\$435M	41%	\$79.8M	46%
IBM***	\$17.5B	14%	\$1.7B	147%
Intel	\$3.89B	40%	\$87.9M	27%
Microsoft	\$1.62B	26%	\$360M****	21%
Sun Microsystems	\$1.65B	18%	\$128M	64%
Tandem Computers	\$594M	9%	\$30.8M	96%
Unisys	\$1.5B	4%	\$39.8M	-20%

*Includes a restructuring charge.
**Reflecting the after-tax charge of \$50.5M associated with the June 1995 acquisition of Pacific Group, Inc.
***Includes a charge of \$100M to write down goodwill.
****Includes a charge of \$100M to write down goodwill.

weakest link since early 1994 — "made substantial progress" on improving profitability margins in the second quarter.

One dark spot for IBM was Lotus Development Corp.'s expected loss for the quarter, the second in a row. Lotus continued its previously announced efforts to curtail expenses by cutting 90 jobs this week, most of them in its sales force.

Meanwhile, the high-powered semiconductor sector was hit by strong results from Texas Instruments, Inc. and Intel Corp. But Intel's results fell short of Wall Street's overly optimistic expectations by 4 cents per share, which added fuel to the market sell-off because it is

such a widely held stock.

Exploding Pentium sales in the consumer market and a rapidly growing acceptance of the chip in the corporate market have turned the chip into a megamonopoly spinner for Intel. The Santa Clara, Calif. company claims that in the last quarter alone it sold more Pentium chips than in 1994. Intel predicted that Pentium shipments will exceed those of the 486 chip for the first time this quarter.

While Sun Microsystems, Inc. was among technology stocks to lose ground last week, the company said its stock is undervalued and launched a buy-back program to boost its price.

Tandem, Stratus come up short

By Michael Goldberg

Fault-tolerant systems makers Tandem Computers, Inc. and Stratus Computer, Inc. last week reported actual and pending quarterly revenue, respectively, that fell below analysts' expectations. The news drove down both companies' stock prices close to 52-week lows.

"[That] sector has skinned the cream of the users who would pay a premium," explained Bruce Halford, an analyst at Raymond James in St. Petersburg, Fla.

Cupertino, Calif.-based Tandem reported third-quarter profits of \$30.8 million on sales of \$384 million. Tandem's stock plunged 21% from \$16.50 to \$13 on July 13 after analysts were told to expect disappointing

sales. As of last Thursday, the stock price hovered at about \$12.38, barely above its 52-week low of \$11.63.

"We did 9% to 10% in sales growth, up from \$543.9 million in the same quarter last year," a Tandem spokesman said. "Stock analysts had expected

revenues to come in at \$604 million."

Shan Wang, a vice president of equity research at Smith Barney Shearson, Inc. in New York, said Wall Street was responding to Tandem's April projections that its sales would reach record levels during the quarter.

"One way [for the market] to show its displeasure is to bite the stock out," Wang said.

Weak report

On July 14, rival Stratus projected it will post second-quarter earnings that fall below the \$17.4 million posted in the same period last year. The Marlboro, Mass. firm said sales fell about 3% from the same period last year, when revenue was \$164.4 million.

Last week Stratus said its numbers, due out this Wednesday, reflect "weak performances" in Europe and most of Asia. Increased shipments of Stratus' new Contiguum series computers were a plus, but the company sold

more low-end models, which bring smaller profits. Stratus stock dropped 19% July 14 after the announcement.

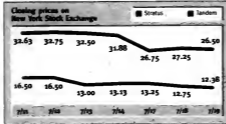
Both companies hope to improve earnings following rollouts later this year of products aimed at enhancing their businesses.

So far, Tandem has won praise for its new ServerNet systems architecture that it says will dramatically increase data throughput for multimedia transactions and data mining on its new servers [CW, July 2]. Stratus, meanwhile, plans to unveil a new fault-tolerant PC server in October in first effort to hit the market's low end.

But promising developments do not get stock analysts said.

Staff writer Tim Guellette contributed to this report.

Compaq/Sequent develop a new server to run R3 software. See page 61.



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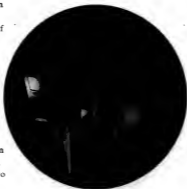
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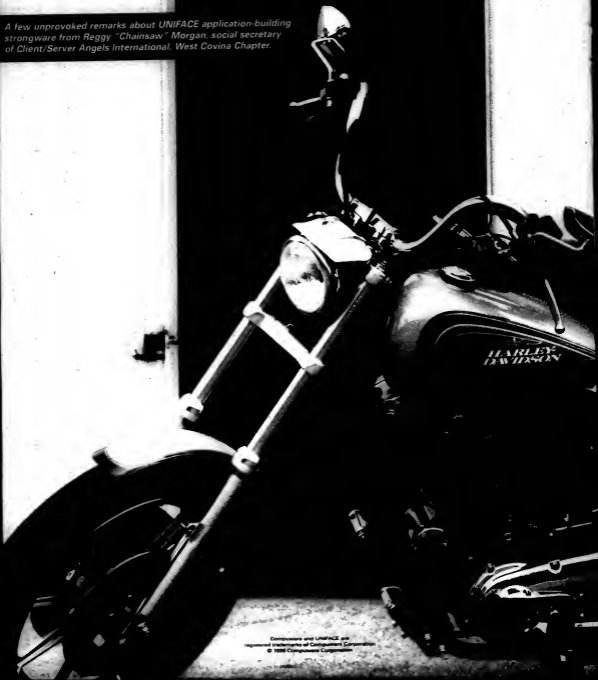
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A few unprovoked remarks about UNIFACE application-building strongware from Reggy "Chainsaw" Morgan, social secretary of Client/Server Angels International, West Covina Chapter.



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WHAT THE BIG GUYS USE



In the old days, it was said that IBM sold you the hardware, and the software was essentially free. In some parts of the world, it's *deja vu* all over again. As the remarkable tale of software piracy unfolded (see story, Cover 1), I couldn't help but mutter, "Unbelievable," "Incredible," "Unread."

No, the software isn't exactly free in the bazaars of Eastern Europe and Asia. But it might as well be. The IDG News Service reporters we dispatched to these bazaars rang up deals in which they paid mere cents for some applications!

The titles we bought would make up the main store displays at CompUSA. We even bought the beta of Windows 95, albeit for the princely sum of \$25. And when the final version is ready, we can simply return to the kiosk, hand over the beta and get a fresh copy.

Moreover, the overtly illegal practice of software piracy is plied with other impunity.

There's no slipping down side streets and into some shady doorway to meet a stranger in a trench coat who slips you a package and disappears with your money. The software markets are more like open-air flea markets, especially in Moscow, where some of the pirates jockeyed for position for our photographs.

And don't worry about the quality. As our test lab specialists discovered, "the software has absolutely nothing different from legit versions." The enterprising pirates even virus-protect their diskettes, no doubt with a perfunctory copy of Norton Utilities.

This amusing tale of capitalism-without-the-rules would be just that — a nice yarn — if it didn't cost the companies that wrote the software and, by extension, their customers, billions of dollars per year. And as a profound sense of resignation among vendors that there is precious little they can do to stop the insanity.

For its part, the federal government has offered on-ly token support to the largely U.S.-based software industry. President Clinton went to extremes to add autometers in their fight against the Japanese. He threatened actions to force rich people to pay more for luxury cars. What leadership!

Yet he and his minions at the Commerce and State departments sit idly while the Chinese, who have a \$15-billion trade surplus with the U.S., allow software piracy to go on unchecked.

Several years ago, one of the largest user groups for the products of the former Cullinet, Inc. was found to be in the Soviet Union. This was peculiar because Cullinet was embroiled from selling its wares there.

Not only have such wrongs, they have apparently gotten much worse.

Bill Labiner

Bill Labiner, Editor in Chief
Internet: blabiner@csu.com



Good deal for IBM

Analysts overlooked two significant reasons why the IBM/Lotus merger is a remarkable deal for IBM. First, IBM desperately needs application software for OS/2. Lotus is one of the few major developers to produce successful OS/2 programs.

Second, as a software developer for Microsoft's Windows 95, Lotus has been and will continue to be exposed to Microsoft's future plans. This could provide IBM's operating system planners with tremendous insight into Microsoft's spreading system strategy. Additionally, Lotus' experience with Windows 95 will certainly allow it to advise IBM about how to integrate and support other Windows 95 application programs in OS/2 environments as Windows 95 evolves.

It will be interesting to see how Microsoft and the Justice Department react when these factors are considered.

Robert Wintermeyer
Croton-on-Hudson, N.Y.

Cobol headed out

Notwithstanding the booziness to David McArthur's point about Cobol's resilience ("Cobol forges ahead," CW, June 5), the idea that Cobol will once more escape the knife may, this time, be wrong.

Retail and departmental consumers have elected C, C++, Visual Basic and PowerBuilder as the desktop language environments of choice. They gained their current popularity on the desktop from having cheap, widely available, technically appealing develop-

ment environments available to the average user.

Compare this with the desktop Cobol market, where a fully equipped PC Cobol desktop costs more than \$30,000, a prohibitive sum for many.

It is obvious that Cobol vendors see the corporate account as their client base. That is not in the system interest of any of us who have invested years of time, effort and money in using Cobol to develop complex software and would like to continue doing so.

Can't a vendor figure out how to profit selling low-cost Cobol tools for a mass market? Where is Philippe Kahn when we need him?

Jim Glen
Visalia, Va.

Legacy code

Paul Gilin, thinking of Windows 95 as OS/2 Version 4.0 ["Random thoughts," July 10], Where has he been? Andrew Schulman, author of *Unauthorized Windows 95*, said Windows 95 is "what you would get if you took Windows for Workgroups 3.11, added an improved version of Windows, gave it a cool new interface and added tons of new application-level software." The mix of 16-bit and 32-bit code puts it closer to OS/2 1.3 circa 1991. Even before it ships, I've heard it called Windows 90+.

John Hicks
New York
716.682.1073@
compuserve.com>

Only winner is CA

I agree with those protesting the buyout of Legent Corp. by Computer Associates ("Legent sale sparks write-in campaign," CW, June 12).

When CA took over Panosonic Systems, Inc., technical support became difficult and marketing support evaporated. I could never find anyone in the local office to answer questions or give me price information.

A number of years ago I worked at another, smaller software firm. CA bought its products, which were never marketed. Why? CA obviously wanted the customers, not the products.

I don't see anyone benefiting from the proposed merger by CA. Meanwhile, the food chain gets smaller, the choices for software fewer. Our shop is small enough to control tapes manually, but if we were looking for a tape management system and the merger goes through, I believe I'd write my own rather than go to CA. All I can say is thank God the management at Landmark Systems had the foresight to prevent such a thing from happening.

Jim Wilson
Systems programming
San Mateo Union
High School District
San Mateo, Calif.

Computerworld welcomes comments from its readers. Letters should not exceed 300 words and should be addressed to Bill Labiner, Editor in Chief, Computerworld, P.O. Box 9974, 375 Cochituate Road, Framingham, Mass. 01901. Fax number: (508) 875-6931; Internet: letters@cw.com. Please include an address and phone number for verification.

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Desktop Computing

PCs AND SOFTWARE • PORTABLE COMPUTERS

Users note 'wizards' in database updates

By Stuart J. Johnston

Microsoft adds automation, other features to Visual FoxPro, Access 95

With Windows 95's launch only a month away, Microsoft Corp. has delivered one of its two desktop database products and is well on the way to delivering the second, beta testers said.

At the end of June, Microsoft delivered Visual FoxPro and Visual FoxPro Professional, a developer's edition of its new visual Xbase system. Still to come is Access 95, but beta testers are already hailing it as a major improvement over earlier versions.

Among beta testers' favorite new features in Access 95 are two "wizards," automated templates that help users quickly perform difficult, confusing or time-consuming tasks.

The Database Wizard provides more than 20 templates to produce database applications.

"You literally pick an application such as order entry or contact management and [the Database Wizard] builds a complete application — the kind of thing you'd buy commercially for \$200 — and it customizes it for you," said Cary Prague, a beta tester and computer book author in South Windsor, Conn.

Prague also said he likes the Table Analyzer Wizard, which analyzes data in any flat file, such as from a personal information manager or spreadsheet, and automatically performs most of the functions necessary to transform it into a set of relational tables.

Tim Landgrave, president of Kison Technologies Inc., a Microsoft Solutions Provider in Louisville, Ky., said he particularly likes the package's replication capabilities.

Replication enables a user to take a copy of a database on a laptop, for example, to work on while traveling; the user can later merge the copied and original databases even if the original has changed.

"A couple of years ago, we had to write our own replication routines, and it took us 150 hours and wasn't as complete as what's in Access 95," Landgrave said.

However, not everything on Landgrave's wish list has been fulfilled in Access 95. He said he would like the replication feature to allow him to copy data from Access to Microsoft's SQL Server. Still, the new version is a big step forward, he said.

Serious environment For its part, Visual FoxPro Professional remains Microsoft's database development environment for serious programming, said Hank Coleman, president of Twenty20 Visual Systems Corp. in Dallas. His company develops and deploys Windows-based point-of-sale software for hotels and restaurants.

Visual FoxPro Professional, which was released in June along with Visual FoxPro Standard Edition, provides several additions to the Standard Edition package [CW, June 5].

High on Coleman's list is an "Upsizing Wizard," which automates the process of moving data from a Visual FoxPro database in Microsoft's SQL Server 6.0 database. The Professional Edition also includes a Class Browser that enables developers to trace class hierarchies.

Database updates, page 43

New features in Access 95



- **Database Wizard**—Template for building complex databases
- **Table Analyzer Wizard**—Converts flat files into relational databases (see above)
- **Forms and reports**—Can be linked directly with Excel spreadsheets
- **Easier to use**

New features in Visual FoxPro Professional



- **Class Browser**—Lets developers quickly see object relationships
- **OLE controls**—For database development (see above)
- **Upsizing Wizard**—Helps automate moving data to SQL Server 6.0
- **CD-ROM Developer's Reference**—An on-line version of the Win32 programmer's reference

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Power Macs gain new ground

Research shops turn to PowerPC-based machines for improved floating-point, processing power

By Lisa Picarelle

Apple Computer Inc.'s success in academia has translated into early adoption of its PowerPC-based Power Macintoshes in related markets not typically viewed as the Macintosh domain: research, engineering and scientific shops.

"A high number of people in education and research were among the first to switch to the Power Mac," said Matt Sergeant, an analyst at Computer Intelligence InfoCorp, a La Jolla, Calif., market research firm. "Apple was behind the SPP platform in terms of speed, so when there was a Macintosh computer available that promised more power, users were eager to rapidly switch over."

Scientific users interviewed cited several benefits to the Power Macintosh over its predecessor and competitors.

"The main advantages of the Power Mac are the processing power, the floating point and the improved publishing features. Most doctors have to present their findings as well as publish materials in an effort to get grant money," said Chris DeVoung, systems manager at The AZ Cancer Center in Tucson, Ariz.

Easier than Windows

As for Apple's rivals, "it's much easier to use [than Windows]—to put new software on, to upgrade, to support," said James Nagel, a staff scientist at The National Institute on Aging in Baltimore, which has approximately 16 Macintoshes—two of which are Power Macintoshes—and half a dozen PCs.

Power Macintoshes offer better floating-point performance than machines based on Intel Corp. Pentium processors, according to industry benchmark tests. The PowerPC 601 133-MHz chip has a SPECfp62 rating of 157, while the fastest Pentium—a 133-MHz processor—was benchmarked at 115 SPECfp62.

This superior performance is a boon to users dealing with numeric-intensive data, performing complex calculations or rendering graphics, according to Linley Gwennap, editor of "The Microprocessor Report," an industry newsletter in Mountain View, Calif.

Gwennap said high-end Power Macintoshes now offer performance that rivals that of low-end and midrange workstations. But, he added, generating complex three-dimensional graphics, doing computer-aided design (CAD) and rendering digital images are best left to workstations. Although the Power Macintosh and Unix workstations use the same RISC chip architecture, Unix has a leg up because it has more powerful software programs are available for Unix than those that run on the Macintosh. And there is a plethora of powerful graphics accelerators for the Unix machines.

"If you're doing 3-D virtual design, then a Power Mac is probably not the right choice, but a workstation might be," Gwennap said.

Will they buy it?

Just how much of a dent Cupertino, Calif.-based Apple will make in the workstation market depends on whether users can accept a little less power to save money, according to Chris LeToec, president of SoftTracks, Inc., a market research firm in Los Angeles, Calif.

"There are a lot of people whose purchasing demands are not that stringent, and they may be looking to Apple's Power Macs as low-cost workstations," LeToec said.

Apple's Power Macintosh systems range in price from \$3,500 to just more than \$10,000. Unix machines, on the other hand, range from \$5,000 for an entry-

level workstation to more than \$35,000 for a high-end model.

Users appreciated the improved processing power of the Power Macintoshes over the previous Apple machines. At the same time, customers said the ease of use of the Power Macintosh, which uses the same operating system as the Macintosh, was a key factor in their initial purchasing decision.

Doctors go Mac

"The Mac seems to be the personal preference of doctors because it is so easy to learn," DeVoung said. The AZ Cancer Center, which mostly performs cancer research but also does some patient treatment, has a mix of systems, including more than 60 Macintoshes, 40 PCs and four Digital Equipment Corp.

VAX workstations. Currently, the facility has only three or four Power Macintoshes, but plans to purchase more in the near future, DeVoung said.

Michael Hollander, a research scientist at the Food and Drug Administration in Billerica, Mass., said the office has approximately 100 Macintoshes—20 of them Power Macintoshes—and about 100 Windows-based PCs. He said the role of the Power Macintosh is twofold.

"Most researchers do not spend all day on the computer, and they find that Mac and Power Macs are easier to use and need less troubleshooting. But some scientists rely on running applications where the results are actually calculated and analyzed by the computer, so they need the extra power," according to Hollander.

Standardizing on Power Macs

Some users said they plan to standardize on the Power Macintosh because their mission-critical applications are Macintosh-only. Corning Inc. in Wilmington, N.C., uses a Macintosh-based data query system that is a combination of hardware and software.

"This is the primary way that our engineers get information," said Mark Joyce, supervisor of fiber systems engineering, computer and information systems at Corning. The company has more than 500 Macintoshes; 10% of which are Power

PC-based

Power Macintoshes.

But some Macintosh users do not plan to move to Power Macintosh to conduct research.

"The Air Force doesn't like the Mac because it's not considered a standard," said Tom Knox,

chief of engineering at Phillips Labs, a research and development test site for the U.S. Air Force in Palm Bay, Fla. "Back when we bought our first Macs, publishing was a strong motivation."

Knox said that although Phillips Labs, which may be closed due to military spending cuts, continues to use the Macintosh as a publishing and productivity tool, the laboratory currently uses Unix workstations to perform most of its research and development. Phillips plans to eventually phase out the Macintosh.

CAD drops Macintosh

Despite the Power Macintosh's improved processing power, CAD is one segment of the scientific and engineering market that continues to ignore the Macintosh.

Even though earlier 68000-based Macintoshes offered powerful graphics capabilities, those machines did not have the computing horsepower necessary to compete with CAD applications running on Unix workstations or even Windows.

As users abandoned CAD on the Macintosh in favor of other platforms, the tiny Macintosh CAD market did not make an appealing business proposition to CAD application developers.

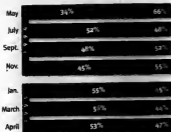
The Macintosh CAD market was \$16.6 million last year—a fraction of the \$725 million generated by DOS and Windows-based CAD, according to Datasack, Inc., a Cambridge, Mass., market research firm.

And while Autodesk, Inc., the CAD software market leader, currently has a Macintosh version of its widely popular AutoCAD product, the San Rafael, Calif., company said it has no plans for a native Power Macintosh version.

—Lisa Picarelle



Neck and neck
Percentage of Apple systems sold based on the system's chip



PowerPC PROCESSOR 68xxx PROCESSOR

Source: Computer Intelligence InfoCorp, La Jolla, Calif.



Kathy and Michelle's Moika Tourism Tracking System had the goods. Object orientation. Menu-driven access. And a full range of functions. Legacy data import. Correspondence tracking. Address book maintenance. Business rules. And security.

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Address Book Maintenance also lets users insert, update and delete information. It adheres to Windows Multiple Document Interface (MDI) standards. Dialogs ensure data gets saved before exiting.



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NEC hits high levels with notebooks

Line includes several multimedia features but maintains lower prices

By Jitkumar Vijayan

NEC Technology, Inc. is adding higher-end features to lower-priced notebook computers, highlighting expected price trends.

NEC last week introduced a line of multimedia notebooks that start at just under \$3,500 and top out at just over \$5,000. Based on Intel Corp.'s 75- and 90-MHz mobile Pentium chips, the new NEC Versa 4000 family could give the company a strong story to tell in the premium notebook market, analysts said.

"NEC has definitely got a lot of momentum going for it in the high end right now, and this product is going to increase the pressure" on the competition, said Randall Giusio, an analyst at International Data Corp. in Framingham, Mass. NEC, based in Mountain View, Calif., is fifth in the U.S. notebook market, behind Toshiba America Information Systems,

Inc., Compaq Computer Corp., IBM PC Co. and Apple Computer, Inc., according to recent figures from Dataquest, Inc.

The combination of price drops on components and competition among the top-tier vendors is expected to result in dramatically falling prices and more robust features during the next few months, analysts said.

For example, the NEC Versa 4000 series features that have traditionally been associated with higher-priced notebooks—those costing more than \$4,500—in machines that sell for much less, analysts said. Some of these features include the following:

- A highly modular design. A front-loading slot allows users to customize the

notebook by easily swapping in their choice of modules. Depending on their requirements, users can swap a CD-ROM drive, a floppy drive, a second battery or a second hard drive into the same slot.

- Built-in multimedia, which includes two stereo speakers, microphone and full-motion video support.
- 10.4-in. color monitors, including 600-by-600-pixel active-matrix color displays.
- Front- and back-mounted, infrared ports.
- An on-line welcome and system tour that familiarizes users with the system.
- An optional docking station that provides capabilities such as motorized docking, port replication, Industry Stan-

dard Architecture full-size slots, and auto ports, built-in sound and warm docking.

Modularity may be popular

"Vendors like NEC are realizing that corporate users don't need all the functionality all the time," so modular designs such as the Versa 4000 that let users customize their machines could become popular, said Joe Perazzo, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

"On the surface [such modularity] definitely sounds good," agreed Glenn Szadysky, vice president and chief information officer at the Aon Specialty Group, an insurance company in Chicago.

"It's not a hassle, but people do want more easily configurable [hardware] options" on their notebooks, he added.

NEC's Versa 4000 is scheduled to ship in August, according to the company. A 75-MHz system with a 540M-byte hard drive, 8M bytes of RAM and a 10.4-in. passive-matrix monitor costs \$3,499.

Briefs

OSHA plan hits snags

The federal Occupational Safety and Health Administration (OSHA) has rescinded its plan to issue an ergonomic standard to combat repetitive stress injuries because of opposition in the U.S. Congress and business community.

QVC pushes Windows 95

QVC Inc., known for displaying the finest in cubic zirconium jewelry on its television shopping network, has bought the Windows 95 wave. The West Chester, Pa.-based electronic retailer was scheduled to premiere a

two-hour show on Microsoft Corp.'s operating system on July 15. Viewers of the show, the longest product demonstration in QVC history, were able to call and pre-book their packages for the Aug. 24 release date.

Custom PC-to-host software

WRQ in Seattle began offering user-customizable versions of its suite of PC-to-host connectivity software. Once customers choose the particular host systems they want to have supported, WRQ said it will produce and deliver the customized suite within three days. Reflection SelectSuite costs about 5% more per user than WRQ's full-fledged suite. Officials said they do not want to discourage purchases of the packaged versions.

Ten X Technology, Inc. recently introduced CD-Write Now, a product for recording CD-ROMs.

The Austin, Texas, company said CD-Write Now lets users record text, graphics and photographs to CD-ROM for distribution or archival storage. It includes authoring software supporting Windows or Macintosh systems.

CD-Write Now features multisection support, which allows users to write to disc incrementally in as many as 99 writing sessions. Each disc stores 650M bytes of data.

The product also includes a recording simulation mode, which lets users test applications by simulating CD performance without writing to disc.

CD-Write Now also includes double- and quadruple-speed drives.

Pricing for CD-Write Now starts at \$2,495.

► Ten X Technology
(512) 818-4132

Cirrus Logic, Inc. has announced CL-GD5462 VisualMedia, a 64-bit accelerator.

According to the Fremont, Calif., company, CL-GD5462 VisualMedia lets PC users simultaneously display multiple video windows at 30 frames/sec. along with high-resolution graphics. It is based on Rambus, Inc.'s RDRAM and is pin-compatible. It was designed for mixed-media visuals and can display multiple applications without reducing performance.

CL-GD5462 VisualMedia implements a packet-based architecture that supports Rambus memories and features a 300M bytes/sec. memory bandwidth.

The CL-GD5462 VisualMedia accelerators cost \$49 for 1,000 chips.

► Cirrus Logic
(510) 622-3300

Database updates offer wizards, more

CONTINUED FROM PAGE 30

ethics in their database object classes.

Another feature that Coleman hailed is a CD-ROM-based, on-line program's relevance on how to program in various Windows environments.

"To me, [Visual Pro

Professional] is proof that Microsoft is not going to kill off ProPro" in favor of Access, a fate some industry observers had predicted would occur, he said.

Visual ProPro Professional costs \$499 for new users and \$299 for up-

grades from earlier versions or competing products.

The Standard Edition costs \$499 and \$100 for competitive upgrades. Access 95 is \$339. Upgrades are \$109 until Dec. 31 and will cost \$129 after that.

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— PC Magazine
Mar. 10, 1995

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April 1995

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COMES UP TO PAR, 48
NEW PRODUCTS, 48

Workgroup Computing

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Sun enlists partners to help speed certification

Plan establishes product testing centers

By Jean S. Rozman
MOUNTAIN VIEW, ILL.

When Sun Microsystems Computer Corp. announces its Network Business Advantage program this week, it plans to address some operational disadvantages it has in competing with Unix, commercial server rivals IBM and Hewlett-Packard Co.

To build its growing commercial server business, Sun will create

"It took Oracle and Sun so long" to get Oracle 7 certified as working with Solaris, said Terry Nelms, manager of systems integrity at WorldCom, Inc. in Jackson, Miss., a national long-distance telephone carrier that has 10 Sun servers. If a package is not certified to work with Sun machines, Sun will not support it, he added.

Other users agreed. "Sun could be a little more tightly integrated with their development partners," said Pongsi Malik,

manager of information systems at Brewers Retail, Inc. in Mississauga, Ontario. "The disparity between the releases when they come out on different platforms has always been a problem for us."

At the same time, Sun is targeting just a few vertical markets, including telecom-

munications and financial services (see chart), where it has already had success attracting server business.

"Since they're coming into direct competition with HP, IBM and AT&T [Global Information Solutions], they have to differentiate themselves," said Thomas Kachary, president of Summit Strategies, Inc. in Boston. "They have to say that there are some market segments where they just can't compete and that they will focus on designated markets where they have strengths."

Sun is showing that it is willing to invest money in infrastructure, personnel, service and support to become a major player in commercial server systems, which accounted for about 40% of Sun's revenue last year. HP and IBM have extensive service organizations and many of the same software partners as Sun.

Sun "is learning the lessons of commercial computing," said Robert Moran, a senior analyst at Aberdeen Group, Inc. in Boston. "These days that involves stepping up to the bar, making alliances, recognizing your weaknesses — and getting people to shoe them up — and playing to your strengths as well."

NT 3.51 tightens links with Win 95, NetWare

By Timothy L. Trimble

Now that Microsoft Corp. has released the latest version of Windows NT Server 3.51, the relationship between Windows NT and Windows 95 has become more solid — or fuzzy, depending on how you look at it.

With the implementation of the Windows 95 Common Controls and Dialogs, the Windows NT interface is becoming more like that of Windows 95. And since Windows 95 applications can now run under NT 3.51 without any changes to the applications, the decision to run NT or Windows 95 becomes more difficult.

NT 3.51 uses a common control library that gives Windows 95 common controls for File Manager, Print Manager, Clipboard, Command Prompt configuration and various multimedia features in NT Menus have been replaced with tabs, help is available via a question mark icon in the upper right corner of the application window and tool tips are displayed for toolbars.

For our test environment, one of the new features of NT 3.51 became crucial. This was the ability to perform an installation across a Novell, Inc. NetWare network using a CD-ROM and no floppy disks. In this case, we worked on a Novell network with a shared CD-ROM device, loading NT onto a Intel PC-based 486, 66-MHz PC that did not have a local CD-ROM drive.

We first booted DOS on the PC, logged in to the Novell network and then mounted a connection to a Pioneer Electric Corp. DR-800 CD-ROM jukebox drive, which contained the NT 3.51 CD. By running the WINNT setup program with the /h parameter (for no floppies), we were able to do a flawless installation of NT onto the PC in about 35 minutes.

The next steps included configuring the NetWare Gateway service, adding a few users and then creating a Client Startup disk for installing NT clients. The client software still supports the base of clients running DOS, Windows 3.1 and Windows for Workgroups as well as Windows 95. The NetWare Gate-

way service allowed us to set up an integrated NT server on a pre-existing Novell network.

The flexibility of doing the installation this way is well worth the \$40-95 price tag for the upgrade. But there is more to NT 3.51 than just an improved installation process.

Feature bug hunt

Because one of the primary hardware platforms for NT Server is the Intel Pentium processor, Microsoft has included the auto-detection and correction of the floating-point division error associated with some processors. If the error is detected during installation, the floating-point hardware can be disabled and floating-point emulation enabled.

Licensing

The type of licensing can now be changed to reflect the user's needs. Client access in the server can be assigned per seat or per con-

PRODUCT

Windows NT Server 3.51

Microsoft Corp.


Redmond, Wash.

Upgrade price:

\$69.95

Key features:

- Windows 95 Common Controls and Dialogs
- Easier networked installation



Metastates in Windows-like feel with its Program Manager, although the new release has several links to Windows 95

- Closer integration with Novell NetWare
- Improved file compression
- New licensing model

Sun's server strategy

Focus on vertical markets in financial services, telecommunications, health care, manufacturing and government

Focus on platforms for data warehouse, customer management and on "businessware" for financial, manufacturing and human resources

Provide high-availability server packages for mission critical applications

Create in-house "competency" centers for specific application and database software to be packaged with servers

"competency centers" inside the company that have expertise in tuning and testing specific database and application packages [CW, July 17]. At the same time, Sun is hiring hundreds more field service staffers to coordinate delivery of products and support.

Head start

For example, Sun is putting up six data warehouse competency centers to do benchmarks and configuration testing, including two focused on Oracle Corp. databases and one focused on Informix Software, Inc. databases. Centers for Sybase, Inc. and Red Brick Systems database products are already operational, Sun said. The company said it will also have five competency centers for business application testing.

"We don't want the customer to call up and have different suppliers — network suppliers, computer suppliers and database suppliers — all pointing at each other," said Sun Chief Executive Officer Scott McNeely.

Longtime Sun users applauded the idea, saying there is often a significant time lag between a new release of the Solaris Unix operating system and certified support from software vendors.

current connection. Licensing per seat is best for networks that allow clients to connect to more than one server, and licensing per concurrent connection is best for networks where the clients connect to only one server.

PCMCIA devices

NT 3.51 now supports the use of PCMCIA cards but not as well as Windows 95 does. NT needs to be shut down and restarted to detect the card.

File system

One of the most important new features of NT 3.51 is the addition of file compression in the NT File System. Specific directories can be compressed via a command line prompt.

Test drive, page 48

Workgroup Computing

On Technology brings E-mail product up to par

By Surendh Mohan

On Technology Corp. recently announced a new version of DaVinci EMail that uses Novell, Inc.'s NetWare Directory Services (NDS).

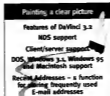
Version 3.2 gives network administrators a single point of administration for their electronic-mail and network directories. With earlier versions, administrators had to maintain two separate directories. Other E-mail packages, including Novell's GroupWise and Lotus Development Corp.'s CC-Mail, already provide this capability.

"This fixes the problem of setting up the user twice," said Robert Brown, a network administrator at Queens County Savings Bank in Flushing, N.Y. "It is significant, especially if you're running NetWare 4.1."

Better integration

Carl Palmer, president of CAD Data Services, a network systems integrator in Jackson, Miss., agreed.

"NDS integration is the only feature they've done anything to that I care a bit about," he said. DaVinci is a shrink-wrapped E-mail package that provides basic functionality, whereas Novell's GroupWise is more feature-rich, he explained. But "GroupWise's MHS integration is not as good as DaVinci's," and GroupWise is more resource-intensive, he said.



DaVinci uses both NDS's Message Handling Service (MHS) and Global MHS. The MHS services pass messages around a single set of servers but lack gateways to other systems based on X.400 or Simple Mail Transport Protocol. DaVinci maintains a list of users on MHS services, explained John Rizzi, vice president of strategic marketing at On Technology in Cambridge, Mass.

Global MHS, the message transport, goes out and gets this list, so messages can be delivered to users on different systems.

Apart from integration with NDS, DaVinci 3.2 offers a client/server model. But this did not impress users much.

"Client/server is not particularly important in our environment," Brown said. What is important is that the product works under Microsoft Corp.'s Windows 95 because DaVinci 3.1 does not.

DaVinci 3.2 is available now for DOS, Windows and Macintosh clients. Pricing starts at \$750 for a 10-user pack.

command history and colors of any DOS character-based window.

Overall, this upgrade release of NT Server 3.51 is a solid package of features and enhancements to an already strong product. With this release—and the flexibility of integrating NT into other networking environments—Microsoft is clarifying its direction for networking and client support. Will the release of Windows 95 solidify the need to rely upon NT as a networking environment? The jury is still out.

Trinkle is a senior business analyst at Hunter Industries in San Marcos, Calif. Dan Parks, network administrator at Hunter, contributed to this report.

VideoServer, Inc. has unveiled Continuous Presence, a multipoint network conferencing product.

According to the Lexington, Mass., company, Continuous Presence is a videoconferencing processing product that lets multiple conference sites see and hear each other simultaneously and continuously. The product was designed to enhance videoconferences through interaction by delivering continuous video from each site.

Continuous Presence can be purchased as the video processing unit in VideoServer's Multimedia Conference Server (MCS) configurations or by ordering it as a processing unit for MCS systems. The Continuous Presence video processing unit supports up to five sites and costs \$23,500.

► **VideoServer**
(617) 863-2300

Hewlett-Packard Co. has introduced the HP DeskJet 1000C color printer.

According to the Palo Alto, Calif., company, the HP DeskJet 1000C is intended for small and medium-size workgroups. It produces black text at up to 18 pages/min. and color text at up to 4 pages/min. and it has four feature modes for print quality and speed.

The HP DeskJet 1000C has four separate ink cartridges with integrated print heads and 600 by 600 dot/in. resolution. It supports more than 13 network operating systems concurrently and enables automatic switching between protocols for mixed network environments. Jet-Direct cards are also available for connection to Token Ring networks.

The HP DeskJet 1000C printer costs \$1,380.

► **Hewlett-Packard**
(415) 857-1501

Mobius Computer Corp. has introduced the Alutra Series AS5000 NoteServer, a scalable, enterprise-wide application server specifically designed to run Notes.

According to the Pleasanton, Calif., company, the AS5000 NoteServer incorporates a hybrid multiprocessor design, combining symmetrical and functional multiprocessing for Notes performance and scalability. The AS5000 system is based on open systems standards and supports an array of networking protocols for LANs and WANs.

The AS5000 NoteServer integrates up to four 100-MHz Intel Corp. Pentium processors dedicated to Notes and processor cores dedicated to specific I/O, LAN, WAN and storage functions. It supports simultaneous connectivity to Novell, Inc. IPX/SPX networks and TCP/IP networks.

Briefs

IBM goes with the flow

While FileNet Corp. is trying to move its workflow software into the desktop arena via its agreement with Novell, Inc. [CW, June 26], IBM's FlowMark software, available for OS/2 and AIX servers, is moving up to the mainframe. IBM recently announced that FlowMark for MVS/ESA will be available early next year. It will be able to link to other FlowMark processes running on OS/2

Client access, peer-to-peer Notes replication and database synchronization are supported across both protocols.

Pricing for the AS5000 NoteServer starts at \$14,985 for a single-processor system with 32M bytes of memory and 10 byte of disk space.

► **Mobius Computer**
(510) 499-5252

General Automation, Inc. has announced Mentor Pro 4.0, a database management system for IntelCorp.-compatible systems.

According to the Anaheim, Calif., company, Mentor Pro 4.0 features a loadable device driver architecture, which lets users load new device drivers through a menu interface without reloading the operating system. The interface also allows third-party software developers to develop their own device drivers.

Mentor Pro 4.0 is a 32-bit, protected-mode system that supports 256 users and SCSI disk and tape drives. It features a programmable keyboard, a user-adding configuration key and a Basicle compiler.

Mentor Pro 4.0 costs \$300 per user.

► **General Automation**
(714) 250-4800

Xerox Corp. has introduced the Document WorkCenter Pro 610, a multifunction fax platform.

According to the Palo Alto, Calif., company, the Document WorkCenter Pro 610 is a plain-paper laser fax with digital copying features and scanning functions. The multiple functions were designed to operate independently and can be operated simultaneously.

The fax component operates at six seconds per page and has a 40-page memory. The copier function lets users make up to 99 copies of a single page and has an automatic collating feature. It has Windows and DOS printing capabilities at 600 dot/in. and can operate as a scanner at 300 by 300 dot/in. with optical character recognition features.

Pricing for the Document WorkCenter Pro 610 starts at \$2,495.

► **Xerox**
(415) 813-6500

Product short

D&G Infosystems, Inc. has introduced Note-Spinner 2.0, which lets Lotus Development Corp. Notes and CC-Mail users perform electronic mail and voice-mail functions from a Touch-Tone telephone. It includes a telephone keyboard interface that converts E-mail text messages into speech by-email and lets users attach voice mail to E-mail text. Cost: starts at \$4,995 per server for a 100-user license. D&G Infosystems, Hempstead, N.Y. (516) 558-1240.

or AIX. Average monthly cost: \$2,100.

Wang releases imaging package

Wang Laboratories, Inc. recently released its Open/Imaging Custom Controls for Visual Basic 2.0, software that lets developers add imaging to their Visual Basic applications and tie the programs into back-end imaging servers. New features in the \$180 package include image annotation controls, a color-to-gray function that improves the readability of black and white images and administrative functions.

Test drive

CONTINUED FROM PAGE 47

or the NT File Manager. Once a directory has been compressed, any file that is dragged, moved or copied to that directory will also be compressed. If the file is being moved from a compressed directory to a noncompressed directory, the file is uncompressed.

Console

This new feature is a plus to those who still need to use DOS applications under NT. The Console application is a Control Panel option that helps configure the fonts, cursor, screen buffer, position,



With so many vendors claiming to offer replication in their products, we believe it's time to clarify what replication really is and explain why it's a critical system component for users, administrators and application developers. True replication is the capability to bidirectionally and efficiently synchronize multiple instances of a database among distributed clients and servers across multiple computing platforms.

It's More Than Public Mailboxes

Conferencing or "threadware" products claim to support file replication, but merely create public discussion mailboxes. Users can send only text messages and file attachments, and security is extremely limited.

It's More Than File Synchronization

File synchronization tools allow you to move files between folders on your network server and your laptop. These tools work well for personal use, but provide a weak foundation for collaborative activities. They work only at the file level, cannot find renamed files, and ignore deletions made while disconnected from the network.

It's More Than Relational Database Propagation

One-way replication is a feature of many relational database systems. A sales division, for example, can send sales figures to field offices, but those field offices cannot return updates or corrections. Relational database technology simply cannot handle multiple data masters, and therefore cannot fully support collaborative work processes.

Business Processes Require True Replication

Collaboration and coordination of team activities, whether within a workgroup or across an enterprise, deal with constantly changing, semi-structured information such as sales proposals and product specifications — the kind of information frequently used and modified by multiple

people in multiple locations. What's needed is a flexible, two-way and secure replication mechanism to facilitate these kinds of business activities.

The replication technology within Lotus® Notes® is well suited for today's business processes. It supports bidirectional



changes to database information — between users and servers or between servers — and sends only the information that has changed.

Replication technology must respond to changing business conditions. With Notes' selective replication, you can replicate only your regional sales data, your purchase approvals, and so on. Notes transmits changes at the document level today, and will offer field-level replication in its next version, Release 4.0.

Notes offers unparalleled support for mobile users. You can work with a local database replica on an airplane, and

replicate updates to co-workers (while their updates replicate to you) when you reach your destination.

Notes' replication offers flexible conflict resolution. In the unlikely event that two people work on the same document simultaneously, Notes keeps both versions and automatically flags the conflict in the database. You can manually or programmatically decide how to resolve the conflict. Other products simply notify the database manager.

Notes revolutionizes application maintenance and distribution. Notes replicates not only data, but application design elements as well. Developers are now free to improve applications without worrying how to distribute the changes — even to mobile workforces.

Finally, Notes replication is reliable and scalable. Notes servers establish scheduled replication sessions, so synchronicity is assured. Other message-based replication methods are error-prone due to unpredictable delivery rates.

Notes offers the most advanced, comprehensive replication available today. Combined with its distributed object store and its superior application development environment, Notes can support a new class of strategic business applications such as worldwide sales force automation, cross-functional project coordination, and links to customers and partners, regardless of their computing platform.

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Directory services

Microsoft plan wins some fans

By Laura DiIorio

A rival vendor reaction to Microsoft Corp.'s recent initiative to develop a single set of application programming interfaces (API) to access multiple directory services has been positive, although not without caveats.

Banyan Systems, Inc. and Novell, Inc. immediately said they would support Microsoft's Open Directory Service Interfaces (ODSI) strategy following its announcement two weeks ago.

ODSI, a set of four APIs, was designed to eliminate the complexity associated with writing applications for different vendors' directories. The goal is to make it easier for users to find and access corporate resources across the enterprise regardless of the back-end directory service on which the data resides.

This means end users will have to log in only once to access directories such as Microsoft's

difficult to make it convenient for users to access them. "Until the ODSI APIs become a reality, users are stuck entering logins and passwords dozens of times a day, and then I have to administer it all, which is a real chore," Montalto said.

To gain support for ODSI, Microsoft said it will solicit and work with other vendors and application programmers to develop a standard specification.

This met with unqualified approval from Banyan, which pledged to deliver an ODSI-compatible version of its new Universal StreetTalk directory service as soon as the specification is completed in mid-1996.

"Minimal discussion"
Microsoft's chief rival, Novell, similarly said it approves of the ODSI effort and will cooperate fully with Microsoft. However, Willy Donahoo, Novell's director of marketing, expressed reservations.

Rivals react

Banyan backs ODSI initiative soon

"We plan to be the first vendor to support ODSI via our Universal StreetTalk directory service. This will ease the burden on developers striving to build truly effective client/server applications," said

John Paul, Banyan's senior vice president

Novell backs ODSI, with caveats

"We will support ODSI, and if it plays out the way Microsoft is telling it, it could be very good for Windows-centric programmers. But ODSI doesn't provide a solution for the Macintosh. Unix or OS/2 environments," said Willy Donahoo, Novell's director of marketing

Windows NT Server Domain Server, Novell's NetWare Directory Services, Banyan's StreetTalk and Lotus Development Corp.'s Notes, said Mike Nash, Microsoft's group product manager for Windows NT Server.

This is welcome news to customers such as Mike Montalto, second vice president of technology planning at Bear, Stearns & Co., an investment brokerage firm in New York with 1,500 users at four remote offices. "Interoperability is my biggest headache," he said.

Because there is no single method to access various directory services, Montalto said, it is

"We'd like to work with Microsoft in defining the ODSI API specifications to ensure that it is truly open, standards-based software and that it supports a super-set of directory services functionalities," Donahoo said. But thus far, he added, there has been "minimal discussion" between the respective Microsoft and Novell technology teams.

That will change in the next few weeks, Nash said. "We have a design preview scheduled for Aug. 16 at our headquarters in Redmond, and we've invited everyone to participate in formulating the ODSI API specification," he said.

SNMP's fate debated

Will protocol fade away or become all things to all systems?

By Steve Moore

The world's most widely used network management methodology may be headed for the shelf.

Some users and analysts say the Simple Network Management Protocol (SNMP) may find itself superseded by other standards (see chart, page 58).

SNMP is useful for delivering network management information to back-end platforms such as IBM's NetView; said Rick Villars, director of network management research at International Data Corp. in Framingham, Mass. But "we see a much greater role going forward for intelligent agents and technologies like [Desktop Management Interface and Distributed Computing Environment] that don't need to rely on SNMP functions to do their jobs," he added.

Staunch SNMP advocates



disagree, saying the standard will be extended to apply to systems, applications and databases as well as networks.

"SNMP is the open standard of choice for communication between the things being moni-

tored and the things doing the monitoring," said Mike Frisoe, MIS director at Burlington Coat Factory Warehouse Corp. in Lebanon, N.H.

At least one user predicted that SNMP's simplicity, pervasiveness and moderate cost will keep it in use for some time.

Management environments based on intelligent agents "will be more expensive, and that potentially will hold them back," concluded Paul Edmunds, a senior information systems analyst at Duke Power Co. in Charlotte, N.C.

SNMP, page 58

Talkback@cw.com

What do you see as the future of SNMP? It stands for elasticity in intelligent agents take its place, or will it continue to be the primary means of getting network management information into applications? Send off to us at talkback@cw.com. Please include your full name. We'll publish a sampling of reader opinions in an upcoming issue.

Wireless heads for workplace

By Mindy Blodgett

Northern Telecom Ltd. has deployed the first campuswide, wireless voice communication system using the broadband Personal Communications Services (PCS) radio spectrum.

The Mississauga, Ontario, company said users frustrated by missing important calls will no longer need to sit tethered to their desks. They can have just one phone number for their desk phone and their handheld device for roaming.

Northern Telecom's Companion Wireless Communications System for Business offers users a digital wireless technology service with widespread coverage integrated with private branch exchanges. It is provided through radio base stations installed by Northern Telecom in buildings and grounds. It runs over the unfenced 1.8-GHz PCS spectrum recently opened for commercial use by the Federal Communications Commission.

With the system, users can make and receive calls from anywhere in the workplace using lightweight, pocket-size phones. The Companion system also offers free airtime and roaming.

Sheila Mham, supervisor of telecommunications at General Injections and Vaccine, Inc., a pharmaceutical distribution company in Be-

llevue, Va., says the network has improved productivity for the company's 8-acre complex, which comprises eight buildings.

"We have put the Companion into the hands of our employees and managers who provide a lot of customer contact backup," Milan said. "The devices allow those checking the stock to immediately tell our sales force about inventory. Our vice president of sales and distribution uses it constantly."

The system, which will be generally available in August, costs \$10,000 for installation and four handheld devices. After installation, additional devices, which offer coverage up to 50,000 sq. ft., are available for \$500 each.

Industry observers say this price may prove high for users. Milan said the price of the system was much lower for beta testers.

"If we had to pay \$10,000, I don't think we would even consider it," she said.

Garry Andersen, an analyst at Dataquest, Inc. in San Jose, Calif., agreed that the cost may be prohibitive.

However, he said the service "is the beginning of the kind of wireless offerings we will be seeing more of."

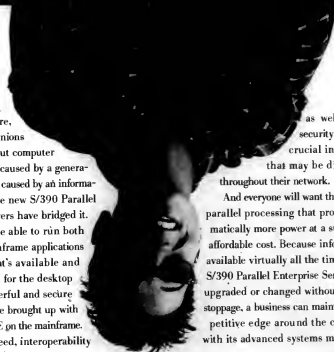
"It essentially gives you all the features of the phone you have at your desk, except you are roaming," Andersen said.

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Raptor broadens security view

New Eagle products offer security for remote PCs

By Gary H. Antnes

Raptor Systems, Inc. last week extended to mobile PC users the protection offered by its Eagle line of security products.

The Waltham, Mass., company introduced EagleNomad, which uses encryption to ensure secure communications between remote PCs and destinations in the enterprise protected by an Eagle product.

To start, a remote user enters a password. The password and all subsequent data is encrypted locally using the Data Encryption Standard algorithm. Corresponding software at the enterprise decrypts and decrypts as well, establishing a "private tunnel" between the two systems.

Raptor also announced EagleDesk, which offers similar protection for PCs

inside the organization. Both products are priced at \$99 a copy.

The announcements mark a significant broadening of focus for the fledgling company, which recently received \$6 million in new equity funding.

Indeed, the company also announced last week a strategy intended to guide users through the various areas of the enterprise that need network security. The strategy defines five key "domains of security"—Internet, workgroup, mobile PC, remote site and integrated enterprise.

Exclusive view

"With these new products and philosophies, they seem to be the only ones really looking at this business from a 30,000-foot point of view," said Mark Leighty, an Eagle user and a telecommunications

analyst at Capital One Financial Corp. in Richmond, Va. He said Raptor's announcements are a wake-up call to users who mistakenly think an Internet firewall that blocks access to corporate networks by hackers is sufficient security.

Leighty said many companies protect against the hacker but neglect the threat from eavesdroppers on public networks, who may be able to intercept communications between the corporation and users on the road. He said Capital One will seriously consider the use of EagleNomad to protect its traveling and telecommuting employees.

Charles Robbins, vice president for communications research at Aberdeen Group, Inc. in Boston, said EagleDesk addresses another often neglected secu-

rity vulnerability: "When you look at security, your first reaction is to worry about some dark phantom attacking from the outside," he said. "But the realities are that the dark phantom could be working on the inside."

Robbins praised the way Raptor has taken its core Internet firewall software and redeployed it consistently in the other domains. Of Raptor's five-part security strategy, he said, "It's a clear message and a broadening of what the [information systems] community should be thinking about."

Raptor also announced Version 3.0 of its Eagle firewall with enhancements that include an option for local management of networks secured by EagleNomad, support for Simple Network Management Protocol alerts, support for an exportable encryption algorithm, improved log support and improved user documentation.

Safe security

According to a recent report from Forrester Research, Inc. in Cambridge, Mass., the Internet will be only the general connector by 1997. The reason? By then, most Internet-based applications will be equipped with authentication and encryption capabilities, Forrester said.

Voice/data networks improve all around

Geotek's wireless offering shoots for 'untapped market'

By Mindy Blodgett

Geotek Communications, Inc. in Montvale, N.J., has launched a wireless network that combines cellular voice with wireless data services.

Geotek's Enhanced Specialized Mobile Radio network, which is being tested in Philadelphia, combines voice services with analog two-way radio, paging and portable computing capabilities. The test price is \$30 a month for up to 500 minutes of connection time.

The network will offer only voice communications at first but will expand to data applications in the future. The digital network is unique because it offers many possible uses in one network, observers said.

Some of the other networks, including those run by RAM Mobile Data USA, L.P. and the ARDIS Co., are for data only, said Mark Lowenstein, an analyst at The Yankee Group in Boston.

"There is a real untapped market out there of corporate buyers who will want a

service offering several things at once," he said.

Geotek officials would not reveal the identities of the testers but claimed that close to 150 companies had signed on for the trials. The company is aiming at small to medium-size businesses with mobile workers and diverse needs including dispatching, credit-card authorization and inventory tracking.

Lowenstein said that with the service, which Geotek hopes to roll out in 38 cities by 1997, the company is positioning itself "as a real player." He said that Geotek's main competition will be Nextel Communications, Inc., which also uses specialized mobile radio frequencies for its network.

Geotek uses the Frequency Hopping Multiple Access protocol over high-powered base stations. The network will support relatively slow throughput of about 4.8K bit/sec.

Customers will be offered two handsets priced at about \$100 each. The devices will also be available for lease through the network's service.

AT&T phone-to-LAN update promises tighter integration

By Neal Weinberg

AT&T Corp. plans to improve the integration of voice and data—an important feature for telemarketing and customer service operations—with enhancements to its Definity branch exchange (PBX) system later this year.

Analysts said the improved Definity slated to include links to Novell, Inc. LANs, will provide users with better tools to handle customer calls from networked PCs.

"All these pieces of the puzzle are coming together, and it's really great for the user," said Dony Sykes, an analyst at Vanguard Communication Corp. in Palo Alto, Calif. Integrating the computer and telephone infrastructures into one entity will make it easier for network managers to keep track of their users' systems, he said.

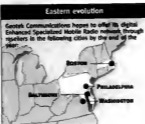
Hooked up

AT&T, based in Basking Ridge, N.J., will add a TCP/IP connection between PBX phone lines and Novell LANs. According to AT&T, this will allow faster data exchange and will offer improved systems management because the network manager will be able to control the PBX through the LAN.

Dennis Gerrity, MIS manager at Stinson, Mag & Frazee, a law firm in Kansas City, Mo., is an early adopter of computer/telephone integration (CTI). He said the integration of voice and data has traditionally stopped at the AT&T switch, and the TCP/IP connection represents AT&T's "first step in opening up their switch" to interconnectivity with the LAN server.

Daniel Briere, an analyst at TeleChoice, Inc., a consultancy in Verona, N.J., said an example of a CTI application would be a pop-up screen that automatically displays information about a customer based on the incoming phone number.

Briere said CTI is expected to show significant growth next year. He said that is because of the wide variety of applications aimed at boosting productivity in businesses that rely on telemarketing to generate revenue or that handle large numbers of customer service calls.



Microtest, Inc. has introduced a TCP/IP module for its Campus diagnostic tool.

Campus is a handheld LAN diagnostic tool designed to help troubleshoot problems on Ethernet networks. According to the Phoenix company, the TCP/IP software module gives end users diagnostic capabilities to search for and find

common LAN problems.

With the TCP/IP module, Campus can perform tests including Duplicate IP Address Detection, IP Ping, IP Host Summary List and Detail, IP LocalSegment Information and Internet Control Message Protocol Monitoring.

The TCP/IP module costs \$995. The Campus base model costs \$3,495.

► Microtest
(800) 932-6400

Product short

Electronic Specialists, Inc. has introduced a protective system for 100Base-T network equipment. The system is intended to suppress electrical or lightning-induced spikes on long 100Base-T network lines. It is available in single- or multi-line configurations. Cost \$73. Electronic Specialists, Natick, Mass. (508) 856-1532.

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SNMP

'It's still based on a polling model that is not appropriate when you have intelligent agents out on the network that want

Critics say SNMP's dependence on network-clogging polling techniques will be its downfall, but Frimex disagrees. "I don't think SNMP forces a dialogue" between agents and management consoles, he said. Instead, alarms can be sent only when conditions exceed preset thresholds, and "you wouldn't have to poll to get that," he said.

Standards experts disagree about

Marshall Rose, president of Dover Beach Consulting, Inc. in Mountain View, Calif., last month proposed a "stripped-down version" of SNMP Version 2 that he said could be implemented more quickly. But Rose's proposal is "totally flawed" because it omits remote configuration capabilities, said Jeff Case, president of SNMP Research, Inc. in Knoxville, Tenn.

Other SNMP watchers paint a compromise scenario in which SNMP manage-

Intelligent agents will become more prominent, but "I don't see them taking over" all SNMP functions, said Jill Huntington-Lee, principal consultant at Brandywine Network Associates in Cinnaminson, N.J. Instead, network managers will likely use SNMP in a subordinate role just to isolate problems to specific networks, systems, databases or appli-

Management FUNCTION	How GROUP AS YOUNGVIEW
Systems management	Device- or application-specific intelligent agent software
Applications management	Application Management Strategy ('Invol Systems' specification based on the Desktop Management Interface)
Database management	Database-specific intelligent agent software and management applications

While proliferating agents initially will add another layer of management complexity, "I anticipate that within two years products will be available that allow you to coordinate the activities of agents from different vendors," she said.

Regardless of whether users adopt SNMP or alternative management schemes, vendors inevitably will add proprietary twists that complicate life for users, said John McConnell, president of McConnell Consulting Co. in Boulder, Colo.

Given vendors' proprietary bent, "Anyone claiming that SNMP has an advantage because it provides all this consistency is talking through their hat," he added.

Accordingly, users say vendors must move toward interoperability for the various standards.

"I want to go out to providers who have these various agents and management programs and say, 'I want them to inter-operate so I can have one guy's agent talking to another guy's management program,'" Prince said.

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Vendors skip Alpha chip

Digital needs to break out of installed base and compete with IBM, HP

By Neal Weinberg

One by one, virtually all of the major vendors have chosen sides in the looming megabit battle between the HP/Intel/Microsoft camp and the PowerPC armies of Apple/IBM/Motorola.

So where does that leave Alpha, Digital's 64-bit microprocessor, an engineering marvel that runs at 300 MHz and can handle 1 billion instructions per second (BIPS)?

"Alpha is a technical wonder but a commercial failure due to lack of volume," said David Wu, an analyst at S.G. Warburg & Co. in New York.

Not first choice

Consider this: In February, when Stratus Computer, Inc. switched to a new processor for its fault-tolerant systems, it chose PA-RISC from Hewlett-Packard Co.

In April, Unisys Corp. retained a new line of Unix-based parallel processing computers based on Intel Corp. chips.

In June, when Data General Corp.

announced it was moving off the Motorola, Inc. 88000 chip, the winner was Intel again. DG said it chose Intel based on its market leadership and financial capacity to build new chip plants.

Wu goes on to branch an idea considered heresy at Digital headquarters in Maynard, Mass. He recommends that Digital dump Alpha and jump on the HP/Intel bandwagon. That alliance is expected to produce a 64-bit P7 chip by 1998.

Understandably, Alpha users are not buying Wu's views. Peter Evans, senior research associate at the University of Miami's School of Marine and Atmospheric Research, said he is totally committed to Alpha. He installed two four-processor Alpha 2100 machines last week, bringing the total at the school to roughly 40.

Evans said his Alpha machines are ideally suited for heavy-duty computational work. And he said he fully expects Digital to keep providing servers that run an upgraded version of the Alpha chip.

But Wu maintains that the best thing

for Digital would be if Chief Executive Officer Robert Palmer pulled the plug on the Alpha chip. "It's the mark of a truly confident CEO to be able to kill his own children," Wu said.

While other analysts do not share Wu's call for such radical surgery, they agree that Digital has critical issues to address as it tries to fill vacant chip fabrication space and gears up for the multimillion-dollar expense of building a new chip plant early in the next century.

"Is Alpha going to become widely used as a general-purpose microprocessor? No. Can Digital afford to continue to indulge in this very costly hobby? Probably," said Andrew Allison, editor of the newsletter "Inside the New Computer Industry."

Allison said it all comes down to whether Digital can boost Alpha sales beyond its VAX customer base in the coming 12-month window of opportunity. After that, competitors such as IBM and HP will have their own 64-bit systems on the market.

Alpha, page 64



Compaq, Sequent to develop platform for SAP R/3

By Julianne Vilejan

Compaq Computer Corp. and Sequent Computer Systems, Inc. announced they will jointly develop a high-end enterprise platform based on SAP AG's R/3 integrated application software.

Analysts say the move is another step by Compaq to secure a more substantial presence in the mainframe replacement market.

The mixed platform will tie together Sequent's Unix-based symmetrical multiprocessing database services and Compaq's high-end Microsoft Corp. Windows NT-based ProLiant servers in a SAP R/3 environment. The effort will target corporations that have decided to use SAP software for applications such as inventory management, sales and distribution and human resources, a spokesman for Houston-based Compaq said.

The Sequent systems will function as back-end Unix servers capable of running huge corporate databases. Compaq's ProLiant systems will act as front-end application servers with a user interface based on Windows NT. Users have typically turned to consultants such as Andersen Consulting or Electronic Data Systems Corp., or even large resellers, to provide this level of integration.

Odd couple

"It is interesting to see Compaq and Sequent play together in the same sandlot," said Cheryl Currid, president of Currid and Co. in Houston.

Currid said Beaverton, Ore.-based Sequent will be able to leverage the scalability of SAP's R/3 in a multiprocessor Unix or NT database server, while Compaq's NT-based application servers and PCs will provide a flexible front end.

"Compaq clearly would like to get more into the enterprise. What is unclear, though, is how exactly this alliance is going to accelerate that process," said Jim Gurdien, an analyst in Workgroup Technologies, Inc. in Hampton, N.H.

Besides Sequent, Compaq is also rumored to be looking at similar partnerships with Sun Microsystems, Inc. and Silicon Graphics, Inc. at the high end.

JULY 24, 1995 COMPUTERWORLD

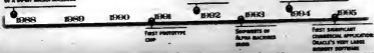
Risky Business

Digital's Alpha chip has taken its own sweet time getting off the blocks

DIGITAL BUILT DEVELOPMENT OF A 64-BIT MICROPROCESSOR

ALPHA BEGINS AS A 150-MHz RISC CHIP

DIGITAL DEVELOPS SECOND-GENERATION 300-MHz ALPHA, WHICH RISES AT 1 BIPS



Shops creep up on IBM peer-to-peer technology

By Craig Stedman

Mainframe shops testing IBM's peer-to-peer rewrite of the SNA network protocol are taking a stealth approach—keeping it hidden in their data centers at first. That way, the companies can get to know the new technology in private and leave the bulk of their SNA networks untouched.

Advanced Peer-to-Peer Networking (APPN) provides potential relief from the host-centric rigidity of SNA even if it just ties mainframes together, users and analysts say. The biggest advantage is that network traffic can be

sent directly to the proper mainframe by APPN's directory server, they added.

That bypasses the rerouting associated with SNA, which establishes a session with a host system that may or may not be running the application an end user wants. As a result, the use of APPN could reduce the need to use mainframe cycles for routing, improve access to mainframe data and make it easier to shift applications between mainframes for maintenance or workload balancing.

"An application can move to whatever processor it needs to, and routing

won't be as big a deal anymore," said Dave Snyder, network development manager at the state of Illinois' central management services division in Springfield. "Hopefully, the APPN side will take care of it for us."

But APPN poses new tuning and management issues that are very difficult to get a grip on," Snyder added. "We still don't have a good grasp on what we're doing" with APPN, he said. The "absolute control" that SNA once provided "isn't so absolute anymore."

The state of Illinois started implementing APPN in May to connect 10 channels among its eight MVS mainframes. The state eventually wants to shift imaging applications run by several departments to IBM. "But we're going to get the glass house in order first and then figure out how to im-

Peer-to-peer, page 64

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WHERE DO YOU WANT TO GO TODAY?

Large Systems

Equifax gives MDs background checkups

By Julia King

Consumer credit reporting giant Equifax, Inc. is looking to leverage its expertise in amassing then reselling huge quantities of data. The company recently launched a controversial physician credentials reporting service aimed at hospitals, health maintenance organizations and other health care providers.

Using the service, providers, which by law must recently physicians every two years, can contract with Equifax Healthcare Information Services in Atlanta to verify licenses and specialty certifications and check for pending lawsuits.

Equifax officials said the service halves the time hospitals now spend sending and receiving paper-based mail and faxes to verify physicians' credentials. Ultimately, the system will save the industry about \$50 million annually, Equifax said.

But privacy experts and physicians remain wary of the service, citing information accuracy and the potential for data misinterpretation as two chief

concerns. "In privacy, you're talking about fair practice, and here the first concern is accuracy," said Evan Hendricks, editor of "Privacy Times," a newsletter in Washington. "Equifax has had a history of problems with its larger credit reporting database."

Earlier this year, Equifax's credit reporting arm settled charges filed against it by the Federal Trade Commission. Among other things, the FTC charged Equifax with creating and maintaining "mixed files," in which some or all of the information in a report pertained to different people.

If the company has problems keeping consumers' credit reports straight, how can it be expected to maintain accurate records on physicians, Hendricks reasoned.

Setting a precedent

But what worries physicians such as Sam Ruby, a cardiologist affiliated with Presbyterian Hospital in Philadelphia, is what other data Equifax might collect down the road.

"The question is where does it end?" Ruby asked. "I also wonder what Equi-

fax's liability would be if it turned out that a person didn't go to the medical school that Equifax listed."

Since November, Equifax has signed up about 40 customers for the credentials-checking service, which costs between \$95 and \$120 per report, depending on whether a customer is an HMO or hospital.

"We use the service pretty much to keep our manpower down," said Anita Howard, director of operations at Phoenix Healthcare Corp., a new Nashville-based HMO that needed to verify the credentials of 1,200 physicians in just a few months.

Another customer, Cigna Corp. in Philadelphia, recently signed a contract under which Equifax will provide some 60,000 verifications for its health insurance network this year, according to Jim Perkins, senior vice president and group executive at Equifax.

During the next six months, Perkins and Equifax plans to make the service available as an on-line offering. Under this scenario, customers will be able to dial in the database on an as-needed basis, he said.

Doctoring the data

Equifax Healthcare Information Service gets its data from a wide variety of sources, ranging from the American Medical Association and the U.S. Drug Enforcement



Agency to hospitals where physicians practiced previously. Roughly 40% of the data it receives arrives either on a computer tape or via electronic data interchange. Another 15% of the company's data is downloaded directly

from sources' computers, and the remaining 35% is paper-based, according to Morgan Guilford, senior vice president of health care technology at Equifax in Atlanta.

All information is stored in an Oracle Corp. database running on an IBM RS/6000 computer. The computer is linked to a network of X Window System terminals and an RS/6000-based imaging system, which converts all paper-based documents to electronic form.

In cases where medical schools and other data sources have not

automated records, Equifax obtains paper-based documents and forwards these to customers. The company scans this



information into its own database so the next time a request comes in, the data will be on-line.

"The whole premise of the database is to share information so [health care providers] don't have to collect it over and over," Guilford said.

Vendors skip Alpha chip

CONTINUED FROM PAGE 61

Digital has a technological lead in high-performance workstations and servers but, this is to "break out of the VAX upgrade business and start stealing business on its merits from HP and IBM. It's not clear that's happening," Allison said.

When it comes to Digital establishing Alpha as a standard, "the great expectations have proven to be little more than a midsummer night's dream," said Terry Shanon, an analyst at Bimstein in Hollis, N.H.

Digital has sold its chip plant in Scotland to Motorola and is negotiating to find a partner to share its Hudson, Mass., fabrication plant.

Shannon and Wu agree that the growth opportunity for Digital rests with Microsoft Corp. Windows NT. Wu suggested that Digital concentrate on using its enterprise-wide expertise to bring Windows NT beyond the workgroup level.

Peer pressures

Still data convert, but users and analysts say hardware will be the appropriate environment

THE GOOD

Directory service automatically routes traffic to the appropriate server

APPN's peer-to-peer design enables it to be changed more easily than host-centric SNA

Applications can move to new hosts without a full network reconfiguration

THE BAD

APPN requires new network tuning mechanisms that take time to understand

Network management may become more complicated with APNN than SNA

APPN requires the two most recent releases of IBM's VTAM software

Peer-to-peer

CONTINUED FROM PAGE 61

grade the users," Snyder said.

SNA traffic can be converted to APNN by IBM's 3740 communications controllers, which will ship as APNN network nodes in November. Between 10 and 20 controllers are being tested by customers who are initially deploying APNN just in the data center, said Yves Hartman, product manager for the front-end processors at IBM's networking laboratory in La Grange, France.

IBM expects most shops to follow a similar scenario as they explore APNN. Hartman added, "You can bet some customers have no intention of modifying [SNA] applications that are running fine," he said.

Preview ates

Chemical Banking Corp. in New York will put APNN in select areas when it starts using the peer-to-peer technology, which is planned for next year, said Dimos Papadimitriou, vice president of network engineering and planning at the bank. Beyond the data center, it will not replace SNA with APNN unless business units request the change, he added.

"We want to be comfortable about the impact it's going to have on our services" before spreading APNN more widely, Papadimitriou said. "Peer-to-peer is good for sharing data, but it has big implications for many general functions and service levels."

The 3746 Model 890 controller, which IBM introduced two weeks ago as a low-cost replacement for its venerable 3745, does not route SNA traffic to mainframes.

But its support for SNA-to-APNN conversion lets customers "turn over the last few feet to APNN," said Robin Layland, a consultant in Hartford, Conn. "In most of the network, it doesn't look like anything's changed."

Users' choice

Customers

Implementing APNN in their data centers will soon be able to choose between IBM's 3746 controller and Cisco Systems, Inc.'s Cisco 7900 router. The Cisco 7900, which is targeted as an alternative to IBM's front-end processors for connecting mainframes to LARS, will get APNN support in August.

Briefs

Pyramid posts massive sale

San Jose, Calif.-based Pyramid Technology Corp. has sold its first massively parallel system to run SAP America, Inc. business applications. Pyramid, a Bremen/Norfolk Information Systems, Inc. subsidiary, also announced that Gerling Insurance in Cologne, Germany, was the first to buy the Reliant RM1000 server that Pyramid unveiled in March.

Rumba upgrade introduced

Wall Data, Inc. in Kirkland, Wash., has announced a version of its Rumba Access/400 software that connects PCs to IBM AS/400 systems. Version 3.0 includes an electronic-mail module that links AS/400 and LAN-based mail processes, support for moving AS/400 data into desktop applications via the Open Database Connectivity specification and TCP/IP and Internet support. The product has a suggested price of \$400.

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AimTech, IBM ink multimedia software union

By Tim Ouellette

AimTech Corp., a maker of multimedia development software, has turned to a tradition-bound corporate giant, IBM, to improve its place in the fast-paced multimedia market.

IBM is teaming up with the Nashua, N.H., firm to help develop a new version of IconAuthor, AimTech's multimedia authoring software.

Because IBM will also resell IconAuthor worldwide, AimTech will gain fast access to IBM's markets. The deal is good for IBM, too, because it lacks a multimedia authoring system.

"It fills a hole we had," said Larry Bowden, director of multimedia at IBM.

IconAuthor lets users develop computer-aided training programs and content for multimedia kiosks or presentations. The software is known for its cross-platform capability and separation of multimedia content and structure, so businesses can update multimedia information without rewriting a whole program.

The separation of content and structure means "we've been able to reduce development time for new courses," said Chuck Lenz, project manager at Albright Insurance Corp. in Northbrook, Ill. Albright has been working with IBM's multimedia consulting group using IconAuthor to create training programs for officers around the country.

Ten fingers
With projected earnings of \$400 million in its multimedia consulting business, IBM should boost AimTech's revenue from \$8.5 million last year.

Corp.'s QSD system for interactive television. Features expected in the new version of IconAuthor, based on recommendations from IBM users, include a spell checker, enhanced text and color support, and support for more languages around the world, according to Andy Huffman, president and chief executive officer of AimTech.

Another area in which IBM will contribute is linking to legacy applications. "Kiosks are moving from pure informational into transactional," with users updating information, Huffman said. "So it is more and more important [that] we integrate with legacy data."

Ⓜ Multimedia projects can be difficult to justify. Here's how three companies did — or are doing — it. See page 71.

Intersolv revamp wins smiles

Maintenance Workbench 2.0 improves performance productivity

By Elizabeth Heichler

Intersolv, Inc.'s Maintenance Workbench for Cobol programmers has received an architectural overhaul in its latest release. Users who once gnashed their teeth about its performance are now smiling.

The Rockville, Md., company's release, Version 2.0, has meant dramatic improvements for programmers at First Data Corp. in Boston. There, an application consisting of 2.75 million lines of code went from needing 21 days to load into the maintenance repository to a mere 27 hours, said Hugh Jurkiewicz, senior systems manager. The time it takes to update has gone from 21 days to four hours, he added.

First Data has nearly 10 million lines of Cobol source code that must be maintained. The data and transaction volumes that the firm handles in its role as a mutual fund transfer agent are so huge that Jurkiewicz said he does not foresee these applications being moved off the mainframe any time soon. The Intersolv product helps the organization maintain these legacy applications.

Another new feature is the ability to recover the database being loaded into the repository when errors such as disk problems occur. Previously, if er-

rors occurred during the long loading process, the entire process would have to be restarted from the beginning.

"It was a huge frustration, almost enough for us to kick [Maintenance Workbench] out the door," said Dave Butz, systems specialist at Great American Insurance Group in Cincinnati. "We would load it, and if there was a glitch, we were never sure if the database was corrupted or not, and we couldn't roll back to the time before the error."

Now, a database journaling feature allows the company to continue the loading process where it left off, before the error occurred. Maintenance Workbench 2.0 is "here to stay," Butz said.

Code sharing enabled
Version 2.0 also includes new tagging facilities, which will be useful to groups doing large-scale systems redesign at MCI Communications Corp. in Cedar Rapids, Iowa, according to senior systems analyst Chris Montgomery. Information about applications

code can be tagged and saved so it can be shared among team members or archived and reused, he said. Overall, the product has brought Cobol programmers at MCI productivity increases of roughly 55% for tasks such as impact analysis and systems documentation, according to Montgomery.

"Bugged down" mainframes meant that MCI has gained performance by doing this work on a LAN-based repository rather than directly on the mainframe, which has pushed up performance, he explained. MCI uses a gateway to Intersolv's P/VS version control tool to keep the source code on the mainframe and repository in sync.

Other improvements Montgomery noted in the new release are two new reports that can be generated. One lists all programs and the copybooks they include, while the other lists all copybooks and the programs that include them.

Maintenance Workbench 2.0 is available now.

Briefs

On-line CASE resource

The University of Sunderland in the UK has launched a World Wide Web home page that offers information about computer-aided software engineering (CASE) tools and vendors and allows users to download freeware or shareware tools. The CASE Tool Home Page is located at <http://www.sunderland.ac.uk/asl/casehome.html>.

Borland tool opens up

Borland International, Inc. plans to make its C++ compiler tools compatible with Microsoft Corp.'s Microsoft Foundation Classes (MFC). In the past, customers have had to use the Borland's Object Windows Library (OWL). Both MFC and OWL are Windows-compatible class libraries that developers can use when building applications. With Version 5.0 of its C++ compiler, Borland will "make it

seamless to compile and build MFC applications," a product manager said. Meanwhile, Borland will continue to improve OWL. The new version will provide full coverage of Windows 95 common controls and 16-bit equivalents of those controls, hot keys, list and tree views and Messaging Application Programming Interface encapsulation.

Sybase updates tool kit

Sybase, Inc. last week unveiled an upgrade to its Gals Development multi-tier data management tool kit. The product, which is intended to compete with Oracle Corp.'s Media Objects kit, is aimed at users building interactive television applications.

Warehousing test lab

Users testing data warehousing waters can do so at a new laboratory announced by consultancy SRL Systems, Inc. in late June. The Data Warehouse Development Factory in Alexandria, Va., runs sample warehouses composed of hardware

and software from various vendors, including Informix Software, Inc., Prism Solutions, Inc., Compaq Computer Corp. and others. Users can also sign up for a five-day course on designing data warehouses.

Warehouse helper arrives

Software AG of North America, Inc. in Reston, Va., announced SourcePoint, software that automates the process of populating data warehouses. Based on parallel data acquisition technology, SourcePoint simultaneously extracts, transports and loads data into a warehouse, a process that has been largely manual up until now, the company said. Pricing ranges from \$20,000 to \$129,000, depending on communications options.

On the 'net

Oracle recently made Oracle Media Objects, a \$99 tool kit for building multimedia systems, available for ordering via the Internet at <http://www.oracle.com>.

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Database maker opens new Windows

By Tim Ouellette

ACI US, Inc. is taking its 4th Dimension (4D) relational database to the Macintosh into another dimension: Windows.

ACI, the U.S. division of France's Analyse Conseils International, has 50% of the Macintosh database market and wants to use 4D's cross-platform capability to attract Windows users. The 4D 3.5 database, slated for delivery in September, will be based on a single set of source code for Macintosh and Windows versions. That means developers need only create a database once to let users access it from either Macintosh or PC database applications.

"What struck me was the ease by which you can go between the two platforms," said Ken Moore, director of the Boston Computer Society's 4D user group and a recent attendee at a product preview in San Jose, Calif. "It will make it very seamless for users."

The Cupertino, Calif., company will rely on these Macintosh users, who work in mixed environments, to make inroads into the Windows market. That space is

already chock-full of competitors, such as Microsoft Corp.'s dBase and Access and Borland International, Inc.'s Paradox.

That does not scare ACI. Its goal is to use its strong presence in the Macintosh database market to gain 10% of the Microsoft Windows/Windows 95 programming tools market by 1997. This may seem like a lofty goal, but the company should hold its own, according to analysts.

Taking on a challenge

"They have proven themselves on the Mac, and they have a good handle on technology," said Dave Kelly, senior analyst at Harwitz Consulting Group, Inc. in Newton, Mass. But beyond its current customers, ACI will have a marketing challenge, especially when a tool such as PowerSoft Corp.'s PowerBuilder is ported to Macintosh later this year, he added.

"It is almost commonplace for our clients to have dual environments," said Michael Erickson, president of Automated Solutions Group in Huntington Beach, Calif., and a 4D user. He said many of his

Macintosh clients have moved to Windows databases because that has not been an option with 4D.

ACI President Mark Vernon said there is more Macintosh use with Windows than many might expect.

Bumpy road ahead

ACI faces stiff competition with its 4D relational database

Estimated 1995 Windows PC database market based on estimated revenue of \$2.01 billion

Company	Product	Market Share
Lotus	Approach	17%*
Microsoft	Paradox	5%
Microsoft	Visual Basic	5%
Microsoft	Access	2%
Other		6%

*Source: Software Source Research, Los Altos, Calif.

He pointed to engineering-related companies working in both Macintosh and Windows environments and the use of Apple Computer, Inc.'s PowerBooks by remote salespeople who must tie in a

central Windows network.

The 4D 3.5 database will feature built-in multitasking, its own programming language and an optional machine code compiler.

Something to prove

ACI's 4D 3.5 Server, an integrated back end to 4D that can handle up to 200 users, will also differentiate it from the likes of dBase/Paradox, according to analysts. PC databases normally run with a server from Oracle Corp. or Sybase, Inc., for example.

Vernon said 4D 3.5 Server targets applications that do not need the firepower of one of these databases but require more strength than a simple PC database.

"I would say that this move was a necessary and very savvy move on ACI's part," said Karen Moser, a senior analyst at Aberdeen Group, Inc. in Boston.

"I really do feel they have a good product. Now they have to prove it in the Windows marketplace."

Software development tools

LBMS adds workflow, Windows 95 look

By Elizabeth Heischler

LBMS, Inc. this week will announce a major release of its software development process management tool. The tool will offer added workflow capabilities, which users say improves its ability to drive and enforce formal processes.

With Process Engineer 3.0, the Houston-based company will also introduce a Microsoft Corp.'s Windows 95 look and feel to the user interface and give users the ability to automatically generate documentation.

The company has also launched a marketing program to popularize the Process Library component of its tool with a variety of specialized software development processes.

Companies that have agreed to develop so-called ProcessWare include PowerSoft Corp., a unit of Sybase, Inc. that is delivering a model for developing applications using PowerBuilder; SQA, Inc., which is providing a tem-

plate of a process for using its Team-Test product; and Lotus Development Corp., which is offering a process for developing Notes applications.

Fred Richardson, manager of software engineering processes at IBM International, Inc. in McLean, Va., said he is pleased with Process Engineer's new workflow capabilities. BDM — a software and information systems developer — has its own methodology that it implemented in Process Engineer. Further, the new version will use electronic mail to automate much of what once was distributed company-wide on paper.

"Using this version will speed things up," Richardson said. "We'll also have a better paper trail." He also has a "keeps track of dates and times," which the company needs for auditing, he said.

The tool will also help control workflow in a project so team members follow the rules of the company's software development methodology. This

will help BDM in its move toward what Richardson calls "virtual projects" in which teams may be composed of the best-suited developers, regardless of where in the country they may be located, he said.

A vision realized

The Activity Manager component of Process Engineer 3.0 is the module that uses desktop E-mail packages to move project and activity information among team members.

This is the final piece of the process management tool set needed for Rite Aid Corp. in Camp Hill, Pa., to realize its vision of a collaborative work environment, according to Kent Podvin, director of its strategic planning at Rite Aid. Developers receive their work input and assignments and a template for their output via E-mail. When the output is completed, it is automatically forwarded to the person on the team who uses that completed work as input for his work assignment.

Support for OLE Automation in the product means that as developers receive their work assignments, they can automatically launch the development tool needed to do that work.

Podvin's group also uses the new PowerProcess template for projects involving PowerBuilder. He said it has proved helpful in providing guidance on what tasks to do in PowerBuilder and how to use LBMS's computer-aided software engineering tool, System Engineer. Process Engineer 3.0 is scheduled to ship in the fourth quarter.

Computer Systems Advisors, Inc. (CSA) has announced SilverRun for PowerBuilder, an application generator for PowerSoft Corp.'s PowerBuilder.

According to the Woodcliff Lake, N.J., firm, SilverRun for PowerBuilder lets PowerBuilder developers generate client/server applications from data models created by CSA's SilverRun, an integrated business modeling workbench. The product lets multiple PowerBuilder developers graphically design applications from techniques in a single data model. The application can then be deployed throughout an environment with multiple user views of data.

SilverRun for PowerBuilder also generates server-level database schema for many different relational databases.

SilverRun for PowerBuilder costs \$4,500.

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Production Systems Technologies, Inc. has announced OPS/92, a rule-based expert system tool.

According to the Pittsburgh firm, OPS/92 can run as a stand-alone program or can be embedded as a module in C or C++ programs. The C++ interface for OPS/92 permits rules and C++ functions to operate transparently on the same object. Coordination between the rules and C++ is handled automatically by the OPS/92 runtime system. The elements in an OPS/92 working memory can be objects that inherit rules from other objects.

OPS/92 will be available Aug. 1 for MS-DOS, Microsoft Corp. Windows 3.1 and Windows NT, OS/2 and Unix systems.

Pricing for OPS/92 development licenses starts at \$1,500.

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Process Engineer 3.0 modules

• **PE/Process Library:** LAN-based process repository that provides access to various development methodologies. Price: \$35,000 per server.

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• **PE/Project Manager:** Used for build-

ing specific project plans from methodology templates, applying estimating models and creating reports. Price: \$3,500 per client workstation.

• **PE/Activity Manager:** Tool enables Process Engineer by allowing team members to receive project and activity information via Microsoft Mail and Lotus® CC-Mail. Price: \$4,500 per client workstation.



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SLOGGING MULTIMEDIA

MULTIMEDIA IS ONE OF THE KEY TECHNOLOGIES OF TOMORROW. BUT EVEN AT INDUSTRY LEADERS SUCH AS AMR, CSX AND USX, MULTIMEDIA IS STILL BEING SHACKLED BY THE RETURN-ON-INVESTMENT FORMULAS OF THE PAST.



For DENNIS GAY,
director of training
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SLOGGING MULTIMEDIA

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BY MICHAEL SULLIVAN-TRAINOR

How can you train 40% more flight attendants without increasing your training budget? That was the challenge put to Marge McKenna, vice president of training at AMR Corp., the Dallas-based parent of American Airlines, and Robert H. Blalock, director of learning technologies research. Their answer: multimedia.

But they couldn't simply install a multimedia training system. Company policy required that new technology investments pay for themselves by reducing current costs. Even though studies showed that interactive multimedia simulations would improve the quality of training, McKenna and Blalock had to act as if that benefit didn't exist when it came time to justify the project.

Instead, "our justification was tied to the dollars we saved by not having students sitting in class," Blalock says. Multimedia saved time, and therefore money.

Multimedia, with its ability to engage users with speech, music and video, can excite the imagination as few technologies can. But multimedia applications aren't sparking imaginative new ways of measuring the value of technology. The systems often run into obstacles because the senior executives who set information technology spending guidelines and the financial managers who approve those projects insist that they cut costs.

Information systems managers and their non-IS project sponsors "are forced to be incredibly detail-oriented when it comes to multimedia," says Reinhard Ziegler, a Dallas-based partner at Andersen Consulting. "They are cost-accounting for things in the new application that they never bothered with in the old one."

Consider these return-on-investment tales from AMR and two other prominent companies — steelmaker USX Corp. and CSX Transportation. They show the cost-justification conundrums faced by training and personnel managers in major corporations who need to win approval for multimedia applications. Those managers were able to go ahead with the projects, but at a cost: They had to spend precious time justifying 1980s technologies with 1980s criteria or find unconventional ways to underwrite their projects.

Slogging to multimedia, page 74



For DENNIS GAY, director of training and instructional design at CSX Transportation, the value of multimedia exceeds conventional ROI measures.

HOW DO WE KEEP CO



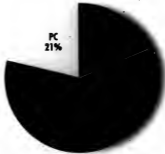
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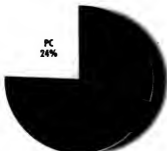
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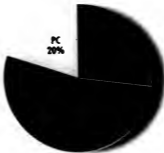
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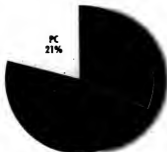
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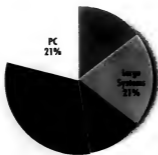
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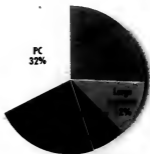


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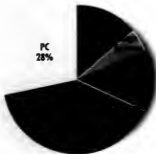
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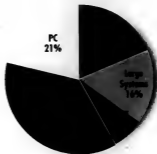
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EVERY WEEK WE

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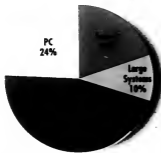
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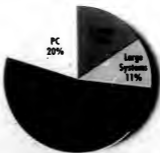
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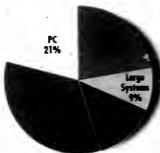
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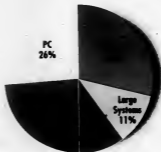
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COMPUTERWORLD

Novell to fill directory gaps

The Newspaper of IS

Justifying Multimedia Investments

SLOGGING to
MULTIMEDIA

CONTINUED FROM PAGE 71

CSX

TRANSPORTATION

Fast Train on a Narrow Track

Cost savings helped Dennis Gay get top management on board his training proposal

Dennis Gay could easily define the benefits of a \$3 million multimedia training project for 30,000 CSX Transportation employees. Gay, director of training and instructional design at the railroad subsidiary of CSX Corp. in Jacksonville, Fla., knew the project would pay for itself in less than three years.

While Gay declined to provide exact numbers, his own assessment showed three benefits:

- Stimulating the operation of a train on a multimedia system would improve train operators' job proficiency, much as flight simulators help airline pilots freshen their skills.
- Safety training for operators and crew using multimedia simulations of safety problems would help improve the railroad's safety record.
- Stimulating violations of federal railroad procedures and environmental regulations would lead to better employee awareness of government guidelines and fewer citations from federal inspectors.

However, to win approval for the project, Gay had to develop a painstaking cost and economic analysis based on reducing current costs to justify new investment.

"Everyone in the company has to develop a [cost and economics analysis] and a structured [return on investment]," Gay says. "We had to come back to a more conservative ROI because we were asking for them to pay now and reap the benefits later."

Using these guidelines, Gay found that with multimedia training, courses could be delivered through 36 remote locations that saved \$1 million per year in travel and off-the-job time for employees. The \$3 million project would pay for itself in three years — plus bring about the expected proficiency benefits.

Everyone agreed on the goal of getting training to remote loca-

A BETTER BOTTOM LINE

BESIDES \$3 MILLION IN SAVINGS FROM REDUCED TRAVEL, MULTIMEDIA TRAINING OFFERS MORE INTANGIBLE BENEFITS

MULTIMEDIA SIMULATION	EMPLOYEE BENEFIT
Operating trains	Better on-time performance
Safety problems	Improved employee safety
Violations of federal environmental and procedural regulations	Fewer citations and fines

tions at lower cost, Gay says; it was the most effective way to make the case for multimedia.

Yet the real value of the system isn't how much it reduces travel costs but how much it improves employee proficiency, he says.

AMR

CORPORATION

Getting IT To Fly

Two AMR managers justified multimedia training through time savings

At AMR, one of the multimedia systems that Marge McKenna and Robert H. Blalock worked so hard to justify trains flight attendants to operate an electrical control panel in an emergency.

The system displays a mock-up of the panel.

Multimedia sped up the training process. The time it previously took an instructor to deliver the course material was 90 minutes. With multimedia, the training took only 25 minutes.

However, McKenna and Blalock, who are responsible for training all AMR employees except pilots, say the greatest value of the application wasn't the time or money it saved but its effectiveness.

Thanks to multimedia, training

was standardized, and course content was increased an average of 30%. Studentia boosted their retention rate up to 70%, a huge increase from the 20% to 30% retention rate without multimedia. Instructors were able to spend 50% more time one-on-one with individual students.

"We found that nearly the entire population of students dramatically improved proficiency at their jobs," Blalock says.

Yet even though these benefits were documented by an internal group of unbiased staff members — "This gave us more validity with upper management," McKenna says — the AMR managers still had to jump through the return-on-investment hoop.

TIME IS NOT JUST MONEY

At AMR, MULTIMEDIA CAN HELP FLIGHT ATTENDANTS TRAIN BETTER AS WELL AS FASTER

BENEFITS OF MULTIMEDIA

	INSTRUCTORS ONLY	MULTIMEDIA AND INSTRUCTORS
Instruction time reduced	90 MINUTES	25 MINUTES
Student retention increased	20% TO 30%	70%
One-on-one time between students and instructors		UP 50%
Course content		UP 30%

Justifying Multimedia Investments



Paying the Payback Piper

A free prototype got Ronald Struch's pilot started. Now he has to make a case for a full rollout.

Ronald Struch, director of personnel at USX in Pittsburgh, says multimedia kiosks are a great way to provide employees with information about their company's health, financial and retirement benefits. So does Robert E. McMaster, manager of USX's employee Savings Fund Plan.

Kiosks can give employees immediate, accurate and customized answers to their benefits questions and

help them with financial planning. They can free up human resources staff to spend more time with employees or solving problems. And they would help the company meet legal requirements to provide information about benefits to employees.

But Struch and McMaster still must cost-justify these kiosks. And since they can't show how they will save money, they've been forced to get creative.

They've succeeded so far, but the fate of the project is still up in the air.

Struch got the ball rolling by starting the project as an inexpensive pilot.

First, Informix, Inc. — a software vendor that has since gone out of business — produced a free prototype. This enabled McMaster to show the benefits of the system to personnel and benefits managers, who signed off on a \$65,000, 15-location pilot. "Most of the time there is a strict justification process. But since this wasn't a huge outlay, we used the discretionary fund for employee benefits," Struch says.

The EASY (Employee Access System for You) kiosks, developed under McMaster's leadership, now serve 5,000 employees.

But the next phase of the project won't be as easy. Struch must make a case for extending the

system to serve 16,000 union employees at USX's six steel plants.

Struch says they can sell these kiosks as an employee benefit to the union representing USX workers. "We're making it a contract issue when we renegotiate," McMaster says.

If the union doesn't go for it, Struch says he hopes the free market will. EASY Plan, the financial planning component of the kiosk software, is being marketed to financial services firms.

WILL EASY DO IT?

IF USX GIVES THE MULTIMEDIA KIOSK APPLICATION A CHANCE, IT COULD BENEFIT EMPLOYEES AND HUMAN RESOURCES PERSONNEL ALIKE.

EXPECTED MULTIMEDIA BENEFITS

- Easy access to information on benefits and retirement planning for USX staff
- More time for human resources staff to spend counseling and solving problems
- Individual, immediate and accurate information for employees

Slogging to Innovation?

Multimedia is no longer a solution looking for a problem. Non-IS managers see multimedia as a pinn for meeting business goals.

Yet support from non-IS managers isn't enough to win funding. Multimedia proponents must spend days convincing others to show how the technology cuts costs using standard cost/benefit analysis.

But the real damage is more insidious: The process prevents senior executives from understanding multimedia's true value. It discourages proponents and executives from spreading the word about its uses. Ultimately, it stifles innovation. Is there a solution? Reinhard Ziegler, a partner at Andersen Consulting, suggests that companies create a "Multimedia Center of Excellence" — a place

where knowledge about the technology, its benefits and pitfalls is stored and made available throughout the company. The central IS organization is a likely home for such a center.

"It would be a valuable, prized role," Ziegler says. "Focused specialty groups could act as internal advisers and transfer knowledge from one group to the next."

And it might spare a lot of managers the indignity of hammering square pegs into round holes when budget time rolls around.

Stillman-Truine is research director electronic messaging and internet applications at International Data Corp. in Framingham, Mass. His internet address is stillman-truine@idresearch.com.

MANAGEMENT

Total Trainer Program 1995. San Francisco, Aug. 13-17 — Also offered Sept. 27-31 in Orlando, Fla., and Sept. 10-14 in Chicago. Keynotes include "The New Trainer: Interactive, Wired and Tightly Unhinged" by Elliott Maule, president of The Meta Center, and "Creating and Managing Performance Technology Organization" by Jim Muller, manager of performance technology at Hewlett-Packard Co. Contact: Lakeside Conference, Minneapolis, Minn. (612) 707-7332.

Quality Function Deployment. Cambridge, Mass., Aug. 15 — Also offered Sept. 19 in Phoenix and Oct. 25 in Dearborn, Mich. Fees: \$865 per person, \$795 per person for groups of 3-5; \$740 per person for groups of 6-11. Contact: Management Roundtable, Inc., Boston, Mass. (617) 232-9090.

USER GROUPS

SCD's 9th Annual International Symposium for Developers, Reviewers and IS Managers. Santa Cruz, Calif., Aug. 30-31 — Contact: The Santa Cruz Operator, Santa Cruz, Calif. (903) 553-9530.

Open Software Foundation Distributed Comput-

ing Environment (DCE) User & Developer Conference. Boston, Aug. 23-25 — Includes four related conferences on DCE technology, deployment, tools/products and services. Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3870.

MicroStation Forum & Exhibition. Chicago, Aug. 22-24 — Also offered Sept. 12-14 in Santa Clara, Calif. Topics emphasize real-world computer-aided design solutions via industrywide offerings of MicroStation-related software, hardware and services. Contact: MicroManagement, Inc., Huntsville, Ala. (205) 837-6094.

TECHNOLOGIES

Object World. San Francisco, Aug. 13-17 — Keynotes: "Object Technology Road Map for the Future" by Gerald Field, senior vice president of Oracle Corp., and "Object Technology: The Journey So Far and What Lies Ahead" by Colin Crook, senior technology officer at Citicorp. Fee:

\$1,000. Contact: IDG World Expo, Framingham, Mass. (508) 225-4030.

Multimedia Conference '95. San Diego, Aug. 14-17 — Keynote speaker Bill Amos, award-winning high-end user interface designer and president and creative director of Synapse Technology, Inc. Contact: Stowers Zappas & Metzger, San Diego, Calif. (619) 236-1332.

Association for Information and Imaging Management (AIIM) Northwest Conference. Seattle, Aug. 17-18 — Topics include multimedia, integrated document management, networks and communications, text management, forms processing and workflow. Fees: \$120 for AIIM members, \$450 for nonmembers. Contact: Fred Westfall, AIIM Northwest Chapter, Seattle, Wash. (206) 624-7377.

INDUSTRIES

Market Driven Product Definition — Best Practices

Implementation. San Francisco, Aug. 21 — Also offered Sept. 30 in Phoenix and Scottsdale, Ariz., and Oct. 26 in Atlanta. Topics will include resourcing product definition efforts, linking products to strategy, conducting successful customer visits, defining customer requirements and creating and maintaining customer focus throughout product development and self-assessment. Fees: \$800 per person, \$750 per person for groups of three to five people; \$745 per person for groups of six or more. Contact: The Management Roundtable, Boston, Mass. (617) 232-9090.

Calendar announcements should be submitted at least six weeks prior to the event and include the title of the event, dates, location, theme or focus, keynote or major speakers, principal topics and a contact person, organization and phone number.

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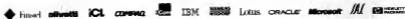
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Richard Livesey-Haworth, Group Executive Director, ICL
Allan Russell, Manager, European Strategy Group, SAS Institute

\$10,000 worth of software for 130 bucks

What a deal!

CONTINUED FROM COVER 1

A little after noon, I arrive at the entrance kiosk accompanied by Olga, a native Russian who's acting as interpreter, and Robert, a British journalist based in Moscow. Five thousand rubles, or one U.S. dollar, gets me in; it's 35,000 rubles (\$7) if you have goods to sell.

We pay and push through the crowd. "I'd put your camera in your bag," Olga warns. For simple transactions, rudimentary phrases and gestures suffice. But getting useful information requires decent Russian, so Olga's language skills will come in handy. Not many vendors in the market speak much more English than my phrase-book Russian.

The kiosks reflect the 90-degree heat. In the aisles formed by the rows of kiosks are stands that display assortments of televisions, radios and stereo and computer components piled in plastic containers and laid out on small tables.

I had imagined the kiosks to be manned by thugs who would be instantly suspicious of the questions I posed and that transactions would be done furtively. This image is quickly dispelled by the friendly, open atmosphere that greets us at the first stand we encounter.

A cardboard sign atop a 6-foot wooden pole says, "IBM PC." The pole is driven into the dirt next to a sample table, on which lie rows of 3½-in. diskettes wrapped in plastic.

Over the stand, several other signs are hung from a string between two other poles. Each one proclaims, "New!" in English, and there are signs for Microsoft Corp.'s Windows 95, Symantec

Our reporters scour the mean streets of Russia and Asia to reveal thriving black markets where name-brand U.S. software is almost given away

tec Corp.'s Norton Commander 5.0 and other popular spreadsheet, word processor, graphics, database and operating system software.

The label on the Windows 95 disks says, in English, "Windows 95" in black, block letters stamped on a generic white label sticker with Cyrillic characters underneath offering the particulars — "April Version" and "Operating System." Cost: 125,000 rubles, or \$25. Not bad, considering a legitimate Windows 95 upgrade is expected to be about \$100.

All the software on the stand costs 6,000 rubles per diskette, making the five disks of Lotus Development Corp.'s 1-2-3 30,000 rubles, or \$6. In the U.S., 1-2-3 retails for about \$325.

I pick up the Windows beta and brown.

"What happens if this doesn't work?" I ask. "Just bring it back next week, no problem," says the man behind the stand.

"Well, what happens if I have trouble installing it?"

"Take my name and number; you can call on Tuesdays and Thursdays," he says. His name is Dmitri, and he's chubby, medium height and sports a money mustache and an unbuttoned, beige bush jacket over a tank top. Not the mafia-type I had feared, but nevertheless I'm a bit nervous when Olga tells me she has just mentioned that I'm here reporting on software piracy in Russia.

Instead, this turns out to be a great conversation-starter. Dmitri gets animated and starts chattering with Olga translating.

"Tell your readers this — you have to approach the issue here differently," he declares. "Western companies charge too much money for their software. The people in New York can afford this stuff, here the average wage is 800,000 rubles (\$100) a month. Big companies are going to make their money anyway."

I end up paying for the Windows 95 beta and a copy of 1-2-3 for Windows, putting 150,000 rubles (\$30) in Dmitri's hands. That's a total loss of at least \$600 for Microsoft and Lotus, based on Business Software Association figures.

What a deal! page 78

*Software pirate Dmitri
ordinary Russians — who
about \$160 a month —
afford expensive foreign
Ware*



Overseas Software Piracy

What a deal!

CONTINUED FROM PAGE 77

We push on through the crowd, which is virtually all men, many shirtless. The stifling heat, noise and ramshackle aspect of the market gives it a timeless quality.

In another 20 feet, we come to a second kiosk that sells software. It's one step up from Dmitri's stand, a drab green sheet-metal shack with a roof and a glass-enclosed display case. Two men are selling business software on CD-ROM, game software and bootleg videos. Here I find what turns out to be the best bargain of the day: a Windows software collection on two CDs — 113 programs on one and 40 programs on the other. Total price — 50,000 rubles (\$10).

I ask if he has another set of discs and whether I can get a price break if I order multiple copies of CDs.

"Sure," he says,

Legitimate Russian resellers condemn pirates as 'Bolsheviks'

Some Russian software bootleggers insist piracy is a fact of life in a country where people don't have a lot of money for expensive Western software.

"That's the same explanation the Bolsheviks gave, that 'if problems come from lack of money, therefore, you have the right to steal. That's the old way of thinking,'" says Michael Chernin, marketing director at Nov Vest, a legitimate software reseller.

"Lack of money is no excuse," says Anatoly Gavrilovich, the company vice president, based in Moscow. "The banks, large accounts and the government have the money; they have enough to buy hardware, and they can buy software."

handing me a price list, complete with the name of his company, telephone number and address. He tells me there's a price break at 50 copies and a better break at 1,000 or more.

"We get a shipment from China once a week — if you call within two days we can make sure you get what you want by next week-end," he says.

We move so, making stops every 40 feet or so at stands and kiosks that sell software. For the most part, the simpler stands sell software on diskettes, for an average of 5,000 rubles (\$1) per diskette (no matter what's copied on it).

The kiosks offer a more sophisticated selection, including software on CDs, games, videos, music, software manuals and guides in English and Russian. They even offer hardware components including processors and hard drives — though there are plenty of stands that specialize in hardware only.



The CDs that have the name of the program printed on them are from China, vendors say, while software copied onto blank CDs are done in Russia.

All the vendors I buy from invariably say I can't exchange the software if I find it doesn't work. When I press them and say I may need some help installing the software, they give me a number where they can be reached outside the market. Many say the business software sells as well as the games.

Some say they are sales representatives for companies based in Moscow. "Yeah, I speak English; we're international," says Michael, whose card (in English and Russian) says he is manager of the Moscow branch of a moving company with offices in several Eastern European capitals. "Call if you want to order in bulk," he smirks. Other vendors work

alone and just seem to be out making a few extra rubles.

By mid-afternoon we are exhausted, parched and ready to leave. We have bought 11 different CDs and diskette packages containing more than 300 separate software programs — from anti-virus software (always a good idea when trafficking in bootlegs, I figure), to desktop productivity programs, operating systems and programming tools. Total spent at the market: \$130. A rough estimate of the total retail value of the software easily more than \$10,000.

My only regret is that I didn't ask anyone if they had to pay protection to the Mafia.

After two kids in a kiosk threatened to beat me up for taking their photo and Michael's mysterious smirk, I decided not to push my luck.

REVIEW

They may be illegal as hell, but black-market disks deliver the goods

By Jeff Angus and Ben Howes

WE may have leaped the wares of the future — two-market software. The bootleg CD-ROMs and the Microsoft Windows 95 beta diskettes we tested weren't always as easy to install as the legal software they were cloned from, but all delivered the goods.

The irritations we found were never in the form of incompleteness or program bugs that weren't in the originals. The only price you pay during your lifetime is that the software comes without technical support, even lists of specified serial numbers for the disks that include programs that require them. The price you pay in the afterlife for buying illegal software? Computerworld testing hasn't analyzed that aspect.

Many of the pilfered products must be installed from disk images, not from the CD-ROM itself. This means the install code originally rendered on floppy disks, the pirate publisher got an image of each floppy into its own subdirectory. So rather than install from the CD-ROM, you have the boring intermediate step of copying each disk image to a floppy and then using that copied set as your install source.

One important technical note: Some of these disks were pressed on CD-ROMs while others were burned onto CD-Recordable discs. The silver CD-ROMs require a higher manufacturing setup cost, while the gold CD-Recordable platters are less expensive for

small quantity runs.

From the buyer's perspective, there are two differences: One is that CD-ROMs are harder to scratch accidentally, although CD-Recordable discs are quite durable. The other is that the CD-ROM-pressing publishers are likely to be bigger and better capitalized, and therefore, likely to be able to buy the official protection they need to continue operating.

Here's a sampling of the software we looked at:

Software 88. The most interesting disc we found was this CD-ROM from Hong Kong, a platter with 88 different programs on it. Those programs include Adobe Systems, Inc.'s Photoshop 3.0; Autodesk, Inc.'s 3D Studio Versions 2.5 and 3.5 and Animator Pro, most of Lotus' and Microsoft's Office suite; Corel Systems Corp.'s CorelDraw 3; IBM's OS/2 Warp; and Microemedia, Inc.'s Director 4.0.

A lot of the software came from the Hong Kong pirates' role models: U.S. press bulletin board systems.

The Autodesk 3D Studio program was simply copied from a previously installed copy, with the previously set-up configuration, making it inconvenient for a new owner to configure. Nor is there any information on the disc about how to configure it. The bootleggers have, considerably, provided a copy of CRACK4ALL, an archived program that cracks the program's hardware key protection.

3-in-1 Collection. This mix is a CD-ROM from Asia containing a well-crafted, high-end combo of OS/2 Warp, Oracle Corp.'s Oracle7 and Novell, Inc.'s NetWare 4.1. The software has absolutely nothing different from legitimate versions. Wouldn't you love to be the network manager or systems support guy for the outfit that bought 3-in-1 without documentation?

dBase - Russian version. The Russian version of Borland International, Inc.'s dBase 5.0 on CD-ROM is the most flawless blackest we found, not just assembled by copying all the files and subdirectories. The disc was an exact copy of the original — the Contrax of Digital Contraband even took the time to copy the publisher's information in the table of contents.

Windows 95. In case you think the free marketers are not fast on their feet, think again. The 21-disc Russian Windows 95 product was the April release, working exactly as well (that is, sorta OK) as the legal version, right down to automatically identifying the installed video card during installation.

Windows Set. This two CD-Recordable disc combo brings together Microsoft's Windows for Workgroups 3.11; Autodesk's AutoCAD 12; two Microsoft databases: Access 2.0 and FoxPro 2.5; Word 6.0 (gives how big, buggy and unwieldy it is, the Soviet throwbacks must love it); and a pair of desktop publishing programs, Ventura Software, Inc.'s Ventura Publisher 4.0 and Quark, Inc.'s QuarkXPress 3.1.

Every program we tested worked exactly like the original. And for those consumers who want to celebrate their ill-gotten loot, they've thoughtfully provided PC Bartender.

Angus is a systems analyst at The Data Works Ltd. in Boston. Howes is an award-winning test developer at the InfoWorld Test Center.



What \$100 will get you in...

RUSSIA

Windows 95 beta version	\$21
Lotus 1-2-3 Version 4.0	\$8
Northern Utilities Version 3.0	\$2
MS-DOS Version 7.0	\$2
Microsoft Office Professional	\$8
Windows NT Advanced Server	\$7
Office for Windows Version 5.1	\$1
Application packages	\$46
PC software collection (one CD with 75 programs, including Microsoft Word and Quattro 7.0)	

ASIA

Five personalized CD-ROMs with 144 individual programs, including MS2 Warp 3.0, Bullfinch 4.1, Word 6.0 + Versions 1.0 and 2.0, Turbo C++ 2.0, Turbo 7.0, Windows 95 beta as well as Chinese-language versions of Windows, Windows NT Workstation, WordPerfect and Office	\$41
Three "cocktail" CD-ROMs with combination of about 60 popular software programs	\$25
Personalized CD-ROM with 60 programs, including Turbo C++ Versions 4 for Windows, PageMaker 5.0 for Windows, Quattro Pro Version 3.0 for Windows, WordPerfect 6.0 for Windows and Norton Antivirus 3.0 for Windows	\$37

U.S.

Windows 95	\$100
Lotus 1-2-3	\$100

Government crackdown hasn't stopped the market for illegal software

By Terho Ulmonen

100 News Service, Taipei correspondent
Mainland China — After the Sino-U.S. trade row in February, the mainland Chinese authorities cracked down on the piracy trade. After randomly walking the streets of Shanghai for the better part of two days in hopes of encountering a cheap software outlet, I have to admit defeat and ask for directions.

I'm told to go to "Computer Street" in Donghai Square, right next to the Shanghai Center on Shanghai's most famous shopping street, Nanjing West Road.

I'm astonished to find that Shanghai's Computer Street consists of a mere dozen or so small computer outlets. In one of these small shops, the proprietor is displaying a cardboard box with about 100 CD-ROM titles.

The selection is not very good, but the price is right. For the non-negotiable price of 40 Chinese Renminbi (\$4.52) per disc — with no receipt, guarantees or upgrade policy — I purchase two CD-ROMs.

The best-buy disc is titled "Software 88" and contains 88 programs, including Adobe's Photoshop 3.0, Corel's CorelDraw 5.0 and IBM's OS/2 Warp. Who can complain about 6 U.S. cents per application? Especially when Photoshop, CorelDraw and OS/2 Warp would run you \$700, \$600 and \$130, respectively, on the U.S. retail shelves.

Tailored software mixes give you more than 80 programs for 10 cents each

By Terho Ulmonen

Hong Kong — Entering the basement of the Golden Computer Centre in Hong Kong is like walking into Business Software Alliance President Robert Holdey's private nightmare.

I'm welcomed by shouts of "three for 200" by salesclerks, who more often than not bear a scanty resemblance to the young toughs who frequent the Crown Colony's karaoke clubs.

"Three for 200" refers to three software CD-ROMs for \$200, Hong Kong currency, which is about \$25 U.S. dollars. And this price is negotiable.

For the price-sensitive buyer, so-called "cocktail discs" — which get their name from the fact that they contain a mix of various software for a fraction of the legitimate cost — are great bargains. These CD-ROMs often pack more than 6000 bytes of software — that's sometimes more than 80 popular applications.

For instance, Volume 2 of the Software Special Zone series was released in May and includes 11 Chinese-language applications and 74 English versions — including Microsoft's Windows 95 Final Preview and IBM's OS/2 Warp 3.0 — for a total of 85 programs. Asking price is HK\$70 (\$9) per disc, which is a per-software cost of 10 U.S. cents. In the U.S., Windows 95 alone is going to run you about \$100, with the cost of a complete OS/2 Warp system at \$130.

The fact that such applications require individualized serial numbers to install correctly isn't a stumbling block.

"No problem," says the salesclerk, and he whips out a preprinted list of the serial numbers required to install every-

Bulletin boards keep

Taipei's pirates in business

By Terho Ulmonen

Taiwan — Purchasing pirated software here, in the form of CD-ROM "cocktail discs," proves complicated, in response to police crackdowns. But it's not impossible.

I finally meet an insider who explains how the system works.

Sellers of "daibai," as the cocktail discs are known in Taiwan, do so on-line. They use the island's bulletin board systems as their main advertising outlets. The prospective buyer can contact the seller by E-mail or by dialing pager/phone numbers listed in the ads.

I page a guy whose name I get off a bulletin board. I agree to meet the anonymous seller at a coffee shop of his choice and then end up purchasing two daibai. I get some 60 programs in my "Ultra 16" cocktail pack for \$950 Taiwan dollars (\$37 U.S.), including Borland's Turbo C++ Version 4 for Windows, Adobe's PageMaker 5.0 for Windows, Borland's Quattro Pro Version 5.0 for Windows, Novell's Inc.'s WordPerfect 6.0 for Windows and Symantec's Norton Antivirus 3.0 for DOS/Windows. At CompuUSA, those five packages alone would run me a whopping \$1,000.

I get no receipt, guarantees or upgrades, and the seller whisks off as soon as he has cash in hand.

thing on the disc.

"But what do I do if the disc doesn't work?"

"I'll give you a receipt," he says. "If you have any problems with the disc just bring it back and I'll replace it," he promises.

What about upgrades? "No problem," the salesclerk says. "Just bring the disc back when the upgrade comes, and I'll give you a discount on that as well."

The odds of the salesclerk's being there at any time in the future are pretty slim. On the other hand, at prices like his, buyers probably don't care.

Competition is tough, and some outlets have expanded their services to providing customized versions of discs. The going price for mixing a personalized software cocktail in May was HK\$1 (about 13 cents) per megabyte.

It's May, and the basement is hot. As I emerge in the relative coolness of the street, I see an open storefront, PowerSoft Computer Center, advertising the "three for 200" deal.

I decide to go in for the kill, and I negotiate a deal of five CD-ROMs (for HK\$320 (\$41.41)). The 144 individual programs on the discs include OS/2 Warp 3.0, Novell's NetWare 4.1 and Microsoft's Visual C++ Version 2.0, which would cost \$130, \$165 and \$490 at CompuUSA, respectively.

"OK, here's the receipt. Come back in 10 minutes and you can pick up the discs," the friendly salesclerk says.

At my disbelief, he says, "Don't worry. We don't keep the discs here, it's too dangerous."

Ten minutes later, I have the discs in hand. "By the way, where do these discs come from?" I ask, on my way out to the street. The salesclerk points north to China with a big smile.



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August Issue

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A look at what's on the horizon for user interfaces, application development, hardware architectures and networking infrastructures.

Vertical Market Focus: Insurance

How downsized, restructured firms in this industry are taking groupware one step further by creating links with extra-enterprise partners — through EDI or Notes or workflow — to further enhance customer service.

Product Focus: Network Systems

Firing Line takes a comparative look at Sun Microsystems' Solstice and IBM's Karat.

Test Drive focuses on Sun Microsystems' Java Home Page authoring tool.

Careers Column: How to spot the signs of staff burn out and tips on how to remedy the problem.



Plan a special patient guide — the Computerworld Client/Server Infrastructure Read Map — this foldout poster features a comprehensive listing of client/server hardware, software, application development and networking products.

Cover Story: Measuring ROI for Client/Server

How are companies examining their return on client/server investments? Can it really be measured in hard dollar terms?

Vertical Market Focus: Transportation

A look at how successful the railroad industry has been in business process reengineering to regain a foothold in the transportation industry. Does it pose a competitive threat to trucking and what are trucking companies doing to remain competitive?

Product Focus: Database Tools

Our Firing Line feature compares ODBC drivers.

Careers Column: Grooming technical managers for project management.

October Issue

Ad Close: August 23

**COMPUTERWORLD
CLIENT/SERVER
JOURNAL**

Where distributed computing meets business objectives

Computer Careers

Continued from page 83

Some employers offer unlimited opportunities for people with these skills, but that's the exception rather than the rule. Macintosh jobs "certainly will not equal the opportunities for Windows and Intel," Hartsook says—at least not in the foreseeable future.

For example, at Polaroid higher purchase costs have made it necessary to limit Macintoshes to specialized situations, making large Macintosh-specific support staffs unnecessary. "We haven't been hiring [Macintosh] support people. There are lots of temporary services out there, so you can get them in to do your support," Rodriguez says.

If you want to almost guarantee yourself a job, learn to support multiple platforms and get a handle on Windows and Novell, Inc.'s NetWare, Hartsook says.

Kenneth Ross, a systems consultant at Liberty Mutual Insurance Group in Atlanta, is buying into the expanded skills idea. This summer, he's considering taking a class to become a Certified NetWare Engineer. "Novell, databases... that's what's in demand these days," Ross says.

It is shortsighted not to look at other things," says Stan Witkowski, a Toronto-based Macintosh consultant. "The Macintosh is not the only computer in use. You need to talk to networks and share data and information."

Still, there are trade-offs. "You can be a jack-of-all-trades, master of none; or you can specialize in one area and risk obsolescing yourself," he says.

Ryan is a freelance writer in Pasco, RI

Are Mac skills enough?

Look at the help wanted ads and you can see that Macintosh-specific job opportunities pale in comparison to PC and networking ones, says Kenneth Ross, a systems consultant at Liberty Mutual Insurance Group. "The Macintosh is only a small part of the entire computing world, and I feel I need to increase my skill set," he says.

Ross' interest in new technologies doesn't mean there's little call for his Macintosh-specific skills at his present employer. Liberty Mutual has standardized on the Macintosh platform; Ross has been a Macintosh specialist for seven years.

NO!
The Macintosh platform is only a small part of the computing world.

these days," he says.

At Liberty Mutual, Ross has been able to do some application development. For example, he developed a Macintosh-based client/server application that allows management to track the progress and status of sales information gathered in the field.

But most of his day-to-day duties involve troubleshooting, support and Macintosh-specific networking. "I can stay at the point in time as now in terms of knowledge level, and that would be fine. But I want to take my skills beyond the desktop," he says.

Ross' first goal is to become a Novell Certified NetWare Engineer, a program he plans to undertake in the next two to three months. "That's definitely something I want to get involved with," he says.

It's a bonus to know more application environments than the Macintosh, admits Eric Warfel, senior IS specialist at the University of California-Livermore's Lawrence Livermore National Laboratory. "But it's not a showstopper."

Warfel has been working in the Macintosh environment for more than five years. He says he sees no end in sight to job opportunities, at least not at his present employer in Livermore, Calif., where there are more than 13,000 Macintoshes in use.

Warfel's primary responsibility is to develop electronic forms, but he's also had a chance to help develop and administer Web home pages for the company's internal use.

Though he's interested to learn more about Intel Corp.-based computing and Unix, he has not yet needed to do so. Before joining Lawrence Livermore, Warfel worked in the private sector, "but even there we had enough Moacs to keep me busy," he says.

And, he adds, with the coming of Microsoft's Windows 95, there will be much more cross-platform functionality among machines running Windows-based software and those supporting other environments, such as the Macintosh and others. "From a programming perspective, I believe there will be tools out there that will allow you to move information from box to box" more easily, Warfel says.

"The Mac will continue to be my primary focus," he says. "I keep my eyes open to see what other things might interest me, and right now the Macintosh has all the tools I need."

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Chicago hope-ful

Jobs are abundant in the Windy City, where diverse skills and a customer-oriented attitude command respect

By Kenneth Z. Chutechiah

Chicago companies are looking hard for a few good men and women, but don't get your hopes up yet. As desperate as they may be to fill positions in their information systems departments, these companies have higher standards than ever.

"For an IS person, the economy is good," says Curt Chumacher, assistant vice president of systems development at the Chicago Board Options Exchange. "We've been looking for people for two years. They're hard to find."

IS managers want the best and brightest. In many cases, they expect job applicants to explain their potential contributions to the corporate bottom line. "You must justify your existence in relation to cost," says Greg Sabatello, vice president of corporate IS at Comdisco, Inc. in Rosemont, Ill.

In fact, an interviewee's ability to qualify his self-worth is one of the make-or-break factors at Comdisco, where hiring has been steady for the past six months. "The technology we're looking to implement has been around for a few years, so give us an economic rationale for using your

skills," Sabatello says.

But it takes more than a savvy set of technical skills to make it in the Chicago market, hiring managers say. IS pros must market themselves to stand out. They must also be able to match their skills with specific company needs.

For example, skills diversification is essential in Chicago, as it is in most metropolitan areas. The more reasons you give your boss for keeping

every sit up and take notice, Novak says. Unix is "the most competitive area and the most difficult [skill] to fill," he adds.

But experience is any leading technology — especially networking — will do. For example, Clint Swift, IS manager at the Bank Administration Institute in Chicago, is looking for good LAN and WAN professionals. "We're in a special niche," Swift says. "Banks are doing more and more. We can't handle the volume of checks by hand."

Despite the all-time high demand for technical skills, egos must be kept in check, something recruiters don't see enough of. "We find that a lot of IS professionals hurt their bridges," says Susan Maslen, branch manager at New Boston Systems, a contract consulting firm in Chicago. "In a few years, [the industry] could turn around, and we won't have as many jobs as people. They won't be as cocky. They're demanding unrealistic rates right now."

Swift urges IS job seekers to be flexible. "If it's not good having the technology if you don't have the people skills to reach others," he says. Be flexible, be diversified, be nice, and the sky's the limit, Maslen says. ■

Self-worth

"Justify your existence in relation to cost. Give us an economic rationale for using your skills."

GREG SABATELLO
vice president of corporate information systems,
Comdisco, Inc., Rosemont, Ill.

the work in-house, the more valuable you are. "Keep yourself diversified in various technologies," says Mark Novak, an assistant vice president of systems development at the Chicago Board Options Exchange. "This industry is changing every day. It's not like the old days."

Experience in Unix, Oracle and Asynchronous Transfer Mode technologies is likely to make IS man-

Chutechiah is a freelance writer in South Harpwood, Maine.



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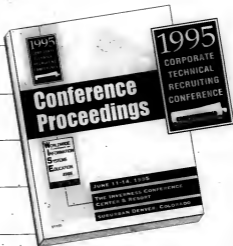
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Marketplace

Internet options everywhere

There's plenty of access software to choose from, but it's fast becoming a commodity market

By Leslie Gill

If you don't find it here, you won't find it anywhere. In just over a year, Internet access software has become a market that offers packages for almost every operating system under the sun.

Options range from off-the-shelf tools that provide simple electronic-mail and news service access to World Wide Web browsers, navigators from the Big 3 on-line service providers and integrated suites of TCP/IP applications for corporate network access. In that context, the market tends to loosely divide into mass-market and enterprise products, "consumer-oriented products and products marketed to corporate users."

Off-the-shelf software such as Netscape Communications Corp.'s Netscape Navigator Personal Edition, CompuServe, Inc.'s Internet in A Box and WinNet 2.0 for Windows and NetManager, Inc.'s Chameleon 4.5 provide tools for full network security and control and management of user access. IAPs are seen as so on.

But the two segments are beginning to overlap in functionality and price, especially as vendors move to capture a share of Internet traffic — from small business and mobile computing users.

For example, companies such as Netscape and CompuServe, which established themselves with single-user products, offer full-blown corporate network

versions. Conversely, companies such as NetManager and FTP Software are selling down integrated packages to target corporate remote users.

Market leaders are also shaking out following last year's debut of Netscape Navigator. Netscape has "done a lot of good partnering and have given them a lot of visibility," says Stan Lepek, a senior analyst at Meta Group, Inc. in Stamford, Conn.

With so many start-ups throwing their hats into the ring, it's critical to judge vendors by both their products and their business model. "Their product may be 50% better than the other guy's, but that won't matter if they aren't around in six months," Lepek says.

In addition, Internet access software packages resemble one another more all the time, making it a buyers' market. "We saw one vendor cut their original price by 50% when a customer played the waiting game to get the term it wanted," Stan Lepek, senior analyst, Meta Group

market. "We saw one vendor cut their original price by 50% when a customer played the waiting game to get the terms it wanted," Lepek says.

As the two ends continue to merge, demand for products that offer less could disappear completely, says Greg Klein, a research analyst at Business Research Group in Cambridge, Mass.

"I don't think these products have much of a future," Klein says. "Once anyone has used something like Mosaic in A Box for more than a few sessions, [they] realize they need something that offers file transfer protocol and Telnet. People want full-featured products, and the power users want products that go beyond full-features."

Gill is a freelance writer in New York

ACCESS SOFTWARE: A BUYERS' MARKET

"We saw one vendor cut their original price by 50% when a customer played the waiting game to get the term it wanted," Stan Lepek, senior analyst, Meta Group

MOSAIC IN A BOX 95, INTERNET IN A BOX 2.0

In a bold move, the Internet Division of CompuServe (formerly Spyn, which CompuServe acquired) announced an Internet software package for Microsoft Corp.'s Windows 95 launch.

Like the June release of its Internet in A Box 2.0, it will bundle a variety of sample products and services, including a CompuServe membership, Internet access and Web browsing software. In addition, Internet Office 4.0, which shipped in May, provides corporate LAN and WAN access to the Internet.

Price: Mosaic in a Box, \$49 to \$499 for one user; Internet in A Box 2.0, \$99.95 for seven hours of connection, \$19.95 per 20 hours.

CompuServe, Inc., Internet Division, Seattle, Wash. (800) 777-9638, Internet: <http://www.spy.com>, <http://www.infodsp.com>

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FTP Software's Internet access software, available in single-user dial-up and corporate network versions, targets the high end of the market by offering a range of integrated tools in a single package. Both OnNet 2.0, the enterprise version, and Explore 2.0, the dial-up version, offer Mosaic, an integrated file manager, E-mail, news service access and automatic IAP registration.

Price: OnNet 2.0 for Windows is slated for the third quarter, but pricing has not been announced. Explore 2.0 is set to ship in early August at an average retail price of \$69.

FTP Software, Inc., North Andover, Mass. (508) 685-4300, Internet: <http://www.ftp.com>, <http://ftp.com>

CHAMELEON 4.5, INTERNET CHAMELEON 4.5

Like FTP Software, NetManager is aiming its Chameleon 4.5 dial-up version to professionals working remotely. This version offers roughly the same performance and features as the corporate network version.

Internet Chameleon 4.5 and Chameleon 4.5 provide integrated tools such as browsers, personal information managers, automatic IAP registration for remote users and E-mail.

Price: Internet Chameleon 4.5, \$19.95 per copy; Chameleon 4.5, \$499 per copy, which integrates via TCP/IP applications suites.

NetManager, Inc., Cupertino, Calif. (408) 973-7775, Internet: <http://www.netmanager.com>

NETSCAPE NAVIGATOR CORPORATE LAN EDITION, NETSCAPE NAVIGATOR PERSONAL EDITION

Netscape Navigator offers point-and-click access to Internet resources. It integrates Web browsing capability, FTP sessions and E-mail (using Eudora Light from Qualcomm, Inc.). Originally available in a LAN edition for corporate users, the Navigator Personal Edition debuted in June, offering individual dial-up users automatic IAP selection.

Price: Both versions of Netscape Navigator are free to educational and charitable nonprofit organizations; Navigator Personal Edition: \$39.95, is in retail outlets, Corporate LAN Edition: Available by volume license agreement.

Netscape Communications Corp., Mountain View, Calif. (415) 254-1000, Internet: <http://home.netscape.com>

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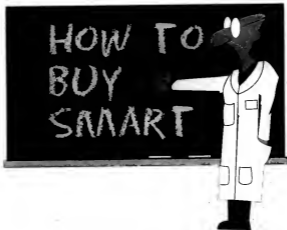
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AT&T Corp.	First Virtual Corp.	Nextel Communications, Inc.	Ten X Technology, Inc.
Atelier Research, Inc.	Forester Software Development, Inc.	Northern Telecom Inc.	TIGRA Group
Axon Networks, Inc.	FTP Software, Inc.	Novell, Inc.	Texas Instruments, Inc.
B	Fujitsu Ltd.	O	The AZ Cancer Center
Bankers Trust Co.	G	Objectivity, Inc.	The Chase Manhattan Bank NA
Baycom Systems, Inc.	Gartner Group, Inc.	Orbit Securities	The National Institute on Aging
Baycom Systems, Inc.	Gateway 2000, Inc.	Orbit Systems	The Radford Group
Bay Networks, Inc.	General Automation, Inc.	Orbit Systems	The Yankee Group
BEN International, Inc.	General Investments and Vendors, Inc.	Orbit Systems	Tohoku America
Bell Atlantic Systems Mobile	Georgia Power Co.	Orbit Systems	Information Systems, Inc.
BIS Strategic Decisions	Gerbing Insurance	Orbit Systems	Traveling Software, Inc.
BMC Software, Inc.	Group 1 Software, Inc.	Orbit Systems	Twenty20 Visual Systems Corp.
Borden, Inc.	GTE MobileNet, Inc.	Orbit Systems	U
Borland International, Inc.	Guide International Corp.	Orbit Systems	U.S. Drug Enforcement Agency
Brandywine Network Associates	H	Orbit Systems	U.S. Justice Department
Brewers Retail, Inc.	Hewlett-Packard Co.	Orbit Systems	U.S. Networks, Inc.
Broadway Systems Corp.	HLC Internet, Inc.	Orbit Systems	Unisys, Inc.
Bruce Silver Associates	Holiday Inns Worldwide	Orbit Systems	Universal Corporation for
Building Branch Interactive	Husar Industries, Inc.	Orbit Systems	Atmosphere Research
Burlington Coat Factory	Husar Consulting Group, Inc.	Orbit Systems	USX Corp.
Warehouse Corp.	I	Orbit Systems	V
Business Research Group	IBM	Orbit Systems	Van der Borch Foods Co.
C	IBM	Orbit Systems	Vanguard Communication Corp.
Cable Data Services	IBM PC Co.	Orbit Systems	Veriquest Technology Corp.
Capital One Financial Corp.	IBM Systems, Inc.	Orbit Systems	VideoShare, Inc.
Chemical Banking Corp.	IBM Systems, Inc.	Orbit Systems	Visteon Software, Inc.
Ciba-Geigy Corp.	IBM Systems, Inc.	Orbit Systems	W
Cigna Corp.	IBM Systems, Inc.	Orbit Systems	Wall Data, Inc.
CIMI Corp.	IBM Systems, Inc.	Orbit Systems	Wandel & Gerstmann
Circuit Logic, Inc.	IBM Systems, Inc.	Orbit Systems	Technologies, Inc.
Civco Systems, Inc.	IBM Systems, Inc.	Orbit Systems	Wang Laboratories, Inc.
Citizens Federal Savings & Loan	IBM Systems, Inc.	Orbit Systems	Warner-Lambert Co.
CNA Insurance Co.	IBM Systems, Inc.	Orbit Systems	Watermark Software, Inc.
Compug Computer Corp.	IBM Systems, Inc.	Orbit Systems	Webb Fargo Bank
Compuserve, Inc.	IBM Systems, Inc.	Orbit Systems	WinNet Communications, Inc.
Computer Associates	IBM Systems, Inc.	Orbit Systems	WorldCom, Inc.
International, Inc.	IBM Systems, Inc.	Orbit Systems	WTRQ
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Computer Systems Advisers, Inc.	IBM Systems, Inc.	Orbit Systems	Xerox Corp.
Corning, Inc.	IBM Systems, Inc.	Orbit Systems	
Corning & Co.	IBM Systems, Inc.	Orbit Systems	
Creative Strategies Consulting	IBM Systems, Inc.	Orbit Systems	
CS First Boston	IBM Systems, Inc.	Orbit Systems	
CSX Corp.	IBM Systems, Inc.	Orbit Systems	
CSS Transportation	IBM Systems, Inc.	Orbit Systems	

July 21 Stock Ticker

July 21 Stock Ticker

Gainers

Losers

Percent

Table with 2 columns: Stock Name and Percent Change. Includes entries like Emerson Automation, IBM, and others.

Dollar

Table with 2 columns: Stock Name and Dollar Change. Includes entries like IBM, Microsoft, and others.

THE FOLLOWING ARE TECHNOLOGY STOCKS AS OF THURSDAY, JULY 20. ALL VALUES ARE APPROXIMATE, AS PERCENTAGE OF "DOLLAR" STOCKS. STOCK VALUES ARE APPROXIMATE, AS PERCENTAGE OF "DOLLAR" STOCKS.

Swing high, swing low

After soaring to soaring highs in past weeks, summer temperatures have returned to normal. The stock market seems to be following suit. After blazing to new heights, it, too, has cooled off.

Group 1 Software, Inc. (GSOF) is a small stock that has burned brightest in the stock market's heat wave. This Lanham, Md.-based developer of mailing list management and postal distribution software saw its stock price increase more than 150% in a recent two-week span (see chart).

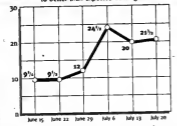
According to Bentley Offutt, an analyst at Offutt Securities in Baltimore, Group 1 Software was in good financial position at a good time, with "superior software capabilities and little competition in their market." Over the past year, "Group 1 has transformed its software offerings to PCs and midrange systems," he said.

On June 29, Group 1 also announced a significant increase in sales and income compared with the previous fiscal year, partly due to its acquisition of Archetype Systems Ltd. and its database marketing products. "Group 1's stock was grossly underpriced at the time of the earnings announcement," which turned into a combustible situation before cooling off slightly in recent weeks, Offutt said.

As for a weather forecast, Offutt said Group 1 is now "very reasonably valued" and positioned well with new products in several sections of their market. — Stewart Deck

Heating up

Group 1 Software's stock has risen in recent weeks, thanks to better than expected earnings.



July 21 Stock Ticker

Large table of stock prices and changes. Columns include Stock Name, Price, and Change. Includes entries like IBM, Microsoft, and various other tech stocks.

July 21 Stock Ticker

Continuation of stock price table from the previous block, listing more companies and their stock performance.

NOTES: 1. All stock prices are as of Thursday, July 20. 2. All values are approximate. 3. All values are in U.S. dollars. 4. All values are in U.S. dollars. 5. All values are in U.S. dollars.

These are the names of the companies that are listed in the table. They are listed in alphabetical order. The names are: IBM, Microsoft, and others.



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IBM desktop defers

CONTINUED FROM COVER 1

so-glorious death of IBM's groupware product line as it exists today.

Whatever the marketing ramifications of the latest announcements, users were still not completely sure whether Notes would retain its platform-agnostic nature — despite repeated assurances from IBM.

"Will they continue to develop Notes server on other platforms?" asked Thomas Bridges, a network administrator at IBM.

"Right now their strongest server is on OS/2, which suggests more concurrent users. When you're a Net-

Ware shop, this is a problem."

But platform support is not the only issue.

"What's this going to do to Lotus Notes Release 4?" wondered John Parkinson, a partner at Ernst & Young's Center for Business Transformation in Irving, Texas, where a robust of Notes 3.3 is in use. "Our strategic plans would depend on Release 4. The process of bringing IBM and Lotus together may slow that down."

Smooth transition

User concerns aside, industry analysts welcomed the speed with which the two companies determined their integration plans.

"I was impressed that they could hammer out [a product strategy] so quickly," said David Coleman, principal of Collaborative Strategies in San Francisco. "I've never seen the old IBM do that. Microsoft as a competitor is helping them move forward so quickly."

"Microsoft's middleware and enterprise services are not as strong [as IBM's]," said Judy Rosati, vice president of marketing at The Radical Group in Palo Alto, Calif. "IBM may have more on their side."

IBM and Lotus certainly think so, making no bones about their intentions to vanquish Microsoft Corp. in the groupware market.

The specifics of last week's announcement (see chart) included the following areas:

- Notes will become IBM's groupware client as well as the server for mail, messaging and groupware.

- Lotus will be IBM's brand name for PC application and groupware software.

- Lotus SmartSuite will be IBM's desktop suite offering, and Lotus Approach will become the desktop database, linked to DB2.

- Organizer, Lotus's calendaring and scheduling program, will be IBM's personal information manager, with the Time and Place component of WorkGroup functioning as the back end within Notes.

- Lotus Notes: Desktop Imaging will become the desktop imaging component.

Spawning out			
IBM will either spin off its desktop offerings or merge them into Lotus products			
IBM Product	Status	Lotus product it takes its place	Organizer
Time and Place	Will exist only as part of Notes Server		
Unimail	Merged	CC-Mail	
Visual Info, Personal Info, WorkMail	Will become component of Notes Imaging		Notes, Document Imaging
Visual Objx	Merged		Approach

with IBM's FlowMark and Visual Info becoming a component.

But the company integration plans did not impress Walt Beck, a user at a large organization. "Frankly, I don't care about WorkGroup/Notes integration. IBM WorkGroup was never a consideration — it doesn't interface in the rest of the world," he said.

Market figures for WorkGroup underscore that belief. Certain components of the product have been shipping since May — despite IBM hype for the two preceding years — but WorkGroup has installed base. It is in pilot-testing mode at 50 sites.

Informix revamps

CONTINUED FROM COVER 1

1996, select users will get early copies by the end of this year, Watson said.

Heavier pressure from users interested in object-oriented and multimedia systems has shone a light on the bare spots of relational databases. If relational companies do not respond to users who want to build object systems, they will lose some business to object database firms.

Part of the plan

The following are some of the key make-over projects under way for Informix-OnLine.

- Creating the capability to store in Informix-OnLine objects and class libraries built with C++, through an interface dubbed the Persistent Storage Module.
- Integrating Informix-OnLine with text, image and multimedia database products.
- Adding support for SQL-3, which is a set of object-supporting extensions to the widely used SQL relational database query language.

If Informix can carry out these plans — and keep to its aggressive schedule — the company would leapfrog some relational database rivals, said Rich Finkelstein, an analyst at Performance Computing in Chicago.

For example, while Oracle Corp. has

talked unofficially for years about an object-oriented version of its name-brand database — the fabled Oracle³ — the product is so far invisible to users. Oracle does resell a fixed object-relational product from Unisql, Inc. in Austin, Texas, but that deal targets only object data users.

For its part, Sybase, Inc. has been silent on how it plans to support object technology.

Computer Associates International, Inc., meanwhile, has announced plans to build links between CA-Ingres database and Fujitsu Ltd.'s object-oriented database.

Informix product plans			
Product	Availability	Function	Notes
New Era 2.0	This quarter	Development kit with application programming	
Informix-OnLine 6.0	This quarter	Support for massively parallel processors and hardware clusters	
Informix-OnLine 7.2	October	Database upgrade that includes parallel load feature and support for 64-bit systems	
Informix-OnLine Workgroup Server	Before year's end	Support for Windows NT	
New Era 3.0	Mid-1996	Kit that includes Versant object database	

Informix's approach to revamping its core Informix-OnLine engine should mean it performs better than an add-on setup would, Finkelstein said. Last week, Informix users were gung ho on the prospect of more advanced object capabilities from their vendor.

"They've already started giving us object stuff in New Era, and now this gives us even more to look forward to," said Mike Reitz, Unix operations manager at the Universal Corporation for Atmospheric Research located

in Boulder, Colo.

New Era is a year-old application development kit with several object-oriented features. Informix plans to ship an upgrade to New Era that includes a pure object-oriented database licensed from Versant Object Technology Corp., also in Menlo Park (see chart).

Informix also working with Encalibur Technologies Corp., a multimedia software provider in San Diego, on a series of plug-in modules for storing various types of information. For example, Encalibur's text and image management products will be linked to Informix-OnLine, Watson said.

Trouble brewing?

The encroachment of CA and Informix on object turf spells trouble for the small, less popular object database companies, such as Objectivity, Inc., said Mitch Kramer, an analyst at Patricia Seybold Group in Boston. "There's jealousy going to be shaking out," Kramer said.

Some users have chafed object databases, scored off by the products' relatively lax security and klunky administration utilities — areas where relational databases are stronger. Bankers Trust Co., for example, has evaluated and rejected pure object-oriented products, said Sarina Pang, vice president of client/server engineering at the New York bank. "I can't see running them in enterprise mode," she said.

Informix, Oracle square off in space

By Kim S. Nash

Internet browser bigwig Netscape Communications Corp. last week threw over partner Oracle Corp. in favor of a deal with Informix Software, Inc.

Oracle, meanwhile, announced a joint development and reseller pact with Sybase, Inc., an Internet browser maker in Naperville, Ill. Oracle and Netscape broke off discussions for a similar agreement in May.

Netscape had built its World Wide Web applications on the Oracle database — but no more. Instead, products such as Netscape Merchant System, a kit designed to help businesses create on-line commerce systems, will all stop Informix's Informix-OnLine or Informix-SI databases, said Marc Andreessen, co-founder and vice president of technology at Netscape in Menlo Park, Calif.

Existing Netscape/Oracle customers, such as MCI Communications Corp. and Computerworld parent International Data Group, can get consulting help from Netscape to switch to the Informix database, Andreessen said.

A day before Informix and Netscape revealed their partnership last week, Oracle announced plans to work with Sybase. However, officials from both firms declined to say exactly what types of products they plan to build together. Announcements will be made later this year, they said.

Andreessen said competition created the impasse between Oracle and Netscape. Oracle offers tools for building Internet applications, a market Netscape plans to enter later this year.

Informix, however, has no such plans, said Jeff Hudson, vice president of business development at Informix in Menlo Park, Calif.

Ever-expanding networks call for decentralized management

The network is the computer. That simple assertion contains a kernel of truth and a bushel of fiction. We wish the network were the computer, but our ability to manage is so erudite we cannot get our networks to function that way.

When we say the network is the computer, we envision linked computing devices working as an integrated, logical device. The reality of our networks, at best, is that they are a loosely coupled machine. And even then, we are using "loosely coupled" loosely, if not with abandon. Unlike quick communication between a CPU and an external disk drive, a network of ten does not know where data requested by a CPU is located.

Network management remains highly centralized at a time when the network and its applications are becoming more spread out. But even after we distribute management to network segments, we will still need to come up with more correlated, useful information than what's available in the data stream to the manager's console.

For many years the goal of network management has been to concentrate events and alerts onto a single screen. Having achieved that through Hewlett-Packard's OpenView, IBM's NetView, Digital's Polycenter and others, we are now flooding network managers with more information than they can absorb.

"Large networks have as many as 2,000 alarms a day," notes Robert Quillin, director of applications at Bell Labs in Los Altos, Calif., the network management application builder for OpenView and SunSoft's Solstice Enterprise Manager.

Even though we can deal with a set of interconnected devices, we still don't have much knowledge of what is happening to the users' views beyond the mechanical boundaries. Quillin notes.

Beyond the servers at the end of the device chain are hundreds of end-user desktops and related devices, with layers of operating systems, peripheral devices and applications. If the network is the computer, then managing all of this means blurring the line between net-

work management and systems management and seeing clearly what is going on at the end-user's desktop.

Microsoft is tackling the task with Systems Management Server, its bid to blend network and systems management of from a point much closer to end users. HP and IBM have started to erase the line through OpenView and NetView.

IBM is working to make its SystemView tools available to develop applications that work under NetView and manage core IBM operating systems. HP is adapting OperationsCenter to work for OpenView in a similar way.

We are overdue to distribute management to decentralized locations. IBM and HP will offer distributed versions of their network managers next year. But right now, if you use multiple

OpenView consoles on different segments of your network, each console does its own polling, establishes its own database and won't communicate with other OpenView consoles.

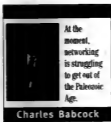
Distributed network management will require more of an object-oriented structure than NetView and OpenView currently represent. Because of that, Cabletron in Rochester, N.H., its Spectrum network manager is based on an object-oriented approach and can function as a distributed system.

Quillin sees network management evolving in these ways:

- Breaking up the single point of network management and distributing it to different centers, making sure decentralized management applications can draw information out of a common database.
- Correlating events to alarms. Doing an analysis of events that shows the cause of the alarm.
- Developing the basic monitoring agent, the SNMP Management Information Base, toward a higher intelligence, looking at multiple events over time, looking for patterns as how they occur.

By adding broader intelligence, the network can become the computer. At the moment it is struggling to get out of the Paleozoic Age.

Babcock is Computerworld's technical editor. His Internet address is clabcock@cw.com.



Charles Babcock

At the moment, networking is struggling to get out of the Paleozoic Age.

Inside Lines

Sympathy for the bedeviled

IBM is feeling the same pain as everybody else struggling to implement RAS's R/I client/server software. Even a \$60 billion computer vendor can't change the immutable facts of life concerning R/I development. IBM began installing R/I early this year to replace its outdated PC manufacturing system, but the software will not be ready to run until mid-1998. "It takes 18 months to install RAS/R/I. There's no way around that," said Jerome York, IBM's chief financial officer, during a meeting with security analysts last week.

Peeking at P6

Intel this week will give the industry another peek at its next-generation P6 chip. In a supposed "last" technology briefing before the chip debuts later this quarter, Intel will reveal details about the on-chip coding of the P6 and the initial clock speeds at which the processor will hit the market. The company will also reveal details about the motherboard design of the P6 that will allow vendors to latch together four P6 chips in a low-cost, symmetrical multiprocessor server.

Get a piece of the spreadsheet

Closely held software maker SAS Institute in Cary, N.C., wants to get a piece of the financial applications business. SAS plans to introduce a series of software modules in the next 18 months that generate financial statements, analyses and decision-support-like reports directly from the leading client/server financial applications. The project must be important to SAS; company co-founder and majority stockholder James Goodnight is one of the lead programmers.

From the Bell jar

From the wacky bits at Bell Labs who brought you Unix comes a new operating system dubbed Plan 9, named for the cult classic *Plan 9 From Outer Space*. Some of the same developers who wrote Unix in 1968 worked on Plan 9, which they claim has not a byte of Unix code. It's a new operating system based on distributed client/server computing and has already been licensed to more than 200 colleges and universities. Plan 9, complete with source code, costs \$250 and runs on Intel, MIPS Technologies, Sun's SPARC and Motorola's 68020 chips.

High-speed Sniffers

This fall, Network Omnium intends to add to its Sniffer line of protocol analyzers so network troubleshooters can examine 100Base-T LANs and backbones. Network General will soon announce a partnership with a silicon vendor to customize a "fast" Ethernet processor for capturing traffic at 100M bps/sec. New high-speed analysis techniques, implemented first for 100M bps/sec Ethernet, will be extended to switched networks, including ATM's operating at speeds of up to 155M bps/sec.

Hubs to get Web manager

Thomas-Corral end week will introduce a management module for its 100VG-AnyLAN hub, featuring dual options for remote configuration and monitoring. Administrators can check this agent across the Web through graphical WebCheck software and via the SNMP through Thomas-Corral's Netra management software or the console of enterprise management platforms.

For those who wonder why lawyers rate so low on the popularity scale—below even auto dealers and journalists—we offer up these legal gems excerpted from a subpoena issued by Peck and Shill to Apple: "The past tense includes the present tense, and the present tense includes the past tense.... The term 'person' means natural persons.... The singular form of a noun or pronoun shall be considered to include within it meaning the plural form of the noun or pronoun and vice versa.... The term 'and' includes 'or' and 'or' includes 'and'.... If an agreement, should you assume an entire group or just plain old news stories or tips, do get in touch with Apple Computerworld on our 24-hour voice-mail 800 line at (800) 520-8585 or our toll-free number at (800) 545-8474. News editor Margyfran Johnson can be reached by phone at (408) 820-8179 or via the Internet at mjohnson@cw.com.

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